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PENETRATING GUNSHOT WOUND OF THE ABDOMEN, WITH A REPORT OF FOUR CASES.

BY EDMUND ANDREWS, M. D., LL.D., PROFESSOR OF CLINICAL SURGERY, CHICAGO MEDICAL COLLEGE.

CASE I.—A lady sitting in her house was struck by a stray bullet coming in at the window, on the Fourth of July last. The bullet entered about two inches downward and outward from the anterior superior spinous process of the ilium. A thoroughly skillful family physician examined the wound and found appearances pointing to the probability that the bullet had traversed obliquely downward in a direction where it could not injure the viscera, so that strong hopes were entertained that nothing dangerous would result. On the following morning, however, he discovered decided evidences of peritonitis, and sent for me in consultation. We carefully examined the patient and agreed on the necessity of an exploratory operation, which was commenced about sixteen hours after the injury. The patient, aside from the peritonitis, seemed in a fairly good condition for enduring operative procedures.

Such antiseptic measures and precautions as could be taken without too much loss of time, were rapidly resorted to. The operating room was cleared out and scrubbed with antiseptic solutions. The patient's abdomen was washed thoroughly with a similar solution, likewise the hands, hair and faces of the operator and assistants, and clean laundried linen drawn on over the other clothing, wet with antiseptics, etc. A small incision was made in the linea alba below the umbilicus, which showed that the abdomen was full of bloody serum. The opening was moderately enlarged, and the serum removed with great care, when the intestines on the side towards the wound were seen to be intensely red with inflammation, and partially agglutinated with fresh adhesions.

No particles of any material could be found among the intestines, or floating in the serum giving any appearance of having escaped from the alimentary canal. The small intestine was carefully examined by passing it through the finger, and at a point a little above Poupart's ligament, on the left side, an opening was found in it, and also an orifice through the mesentery of an adjacent coil. The wound was closed with Lembert's suture, using antiseptic silk for the stitches.

At this point the patient's pulse began

to fail. Search, however, was continued until it was reasonably certain that no other opening in the intestine existed. We then began a complete "toilet of the peritoneum" by clearing out all the remaining bloody serum. No clots of any considerable size were found, and the actual quantity of blood effused was not large. Before this process could be finished to my entire satisfaction, the pulse of the patient sunk still lower and became almost imperceptible, so that she seemed likely to die on the table from shock. The cleansing of the abdominal cavity was therefore finished tolerably well, but not with the thoroughness that would otherwise have been done. The wound was dressed antiseptically, in the usual manner, and the patient placed in bed and treated with warmth and stimulants. After some hours she reacted. The next morning all the symptoms were more favorable. The temperature was lower than before the operation and the strength seemed comparatively good. The following day, which was the third from the injury, she sunk into a state of asthenia and died. A proper autopsy was not obtained, but a slight examination of the abdominal cavity showed some degree of renewal of the serous effusion without any material hæmorrhage.

CASE II. was another fourth of July accident.

A robust man of middle age, being engaged in a dispute with another person, the latter drew a pistol and shot him in the left side of the abdomen, a little above the superior spinous process of the ilium, penetrating the cavity of the abdomen.

Great shock followed, and, on evacuating the urine, it was found to be bloody, indicating that the left kidney had been struck by the bullet. Sixteen hours afterwards I was called in consultation. The patient was moribund, the pulse almost imperceptible, and at moments when it could be counted it was about 150. Deeming that he was already past any possibility of help, no laparotomy was attempted.

CASE III.—A young man going past a saloon, whilst a row was in progress, but on the opposite side of the street, received a shot from a small pistol fired by some one in front of the saloon. Being called in consultation, on the same day, I found the pistol-wound directly over the stomach in the linea alba, above the umbilicus. As this was many years ago, laparotomy was not considered among the recognized remedies for the condition. The patient was kept in bed, given small quantities of water at a time for drink and deprived for some days of food. He was also kept pretty thoroughly under the influence of opiates. No bad symptoms of any kind occurred. About the tenth day he passed the bullet per anum, and recovered as if his injury had been of the most trivial sort.

CASE IV.—A robust young man was in a saloon where a policeman attempted an arrest, and in doing so used his pistol, having a calibre of 42. The bullet struck the man in his back, a little above the right kidney, and passed out at the linea alba, halfway between the umbilicus and the extremity of the xiphoid cartilage.

The young man's stomach was empty of food, but he had taken a pint or two of beer. He vomited blood and beer. Considering the direction of the bullet and the vomiting of the blood, I deemed it reasonably certain that the stomach was perforated and recommended laparotomy to him. This he promptly refused to submit to, so I confined him to bed, deprived him of food, and gave him opiates in order that he might die a correct and scientific death. However, nothing particular occurred. No fever, inflammation or peritonitis followed, nor anything else of any consequence whatever. The patient recovered with more ease and comfort than he would have done from the amputation of a finger.

I am not prepared to make an elaborate discussion upon these cases, for evidently what we need at present is an accumulation of facts upon which to base future reasonings. The important question which presses for answer in such cases is this: Shall there be a laparotomy? My opinion is that where an intestine is wounded a laparotomy is usually demanded, if the patient is not

already in too prostrate a condition to give hope of success.

But the more difficult class of cases are those apparently in which the stomach is wounded with small bullets.

The author of the "Surgical History of the War of the Rebellion" expresses the opinion that wounds of the stomach not laparotomized will be found more dangerous than those of the intestines.

My own observation would tend in a contrary direction. It is my opinion that the thick walls of the stomach, lined with a tough mucous membrane loosely attached to it, admits of being perforated in many instances by a small bullet without leakage of the contents. The muscular fibers of the thick walls of the stomach seem to spread and close together again after the bullet, as they would after an aspirator needle. At the same time, where the shot is oblique the bullet may traverse a little distance between the muscular walls and the mucous lining, so that the openings of the two are not opposite each other, making a valvular arrangement which prevents leakage. On the contrary, the thin walls of the intestine do not admit of such a result, and leakage is inevitable if they are perforated.

Unfortunately no man can distinguish positively between the conditions beforehand; and though the stomach wounds often recover without operation, it is best to make at least an exploratory opening into the abdomen in most cases of penetrating wounds, unless the general condition is such as renders it morally certain that the patient cannot survive the shock.

In military practice, and before abdominal section was used for gunshot wounds, the mortality from this injury was about 76 per centum, exclusive of those who died at the line of battle, without appearing at the field depot. The small pistol shots of civil practice are probably less fatal than the ounce-weight military projectiles, so that apparently the average patient has more than one chance in four of recovery without operation; yet if we could select out the intestinal gunshot wounds and reckon their results separately, we should probably not find one in twenty recovering, and these are the ones in which laparotomy is the most urgent. However, no one can determine beforehand precisely what the bullet has cut, hence, as before stated, the comparatively safe exploratory incision to determine the exact injury should be employed far more frequently than it now is.

GUNSHOT WOUND OF THE ABDOMEN, WITH PERFORATION OF THE INTESTINES.

BY FRANK T. ANDREWS, A. M., M. D.

THE following case is of interest in showing how the varying conditions in actual practice frequently interfere with the performance of laparotomy for gunshot wounds of the abdomen.

A gentlemen, fifty-seven years of age, of good physique and temperate habits, received a bullet-wound of the abdomen from a thirty-two caliber revolver.

After receiving the injury, the patient walked at least a quarter of a mile, and rode several miles in a buggy over country roads. He was then brought to this city, a distance of sixty miles, by rail.

When I first saw the patient, at least eight hours after the accident, he was suffering from overwhelming shock and from internal hæmorrhage. The extremities were cold. The temperature in the axilla 96.4° F. The pulse was nearly imperceptible at the wrist, and at intervals, when it could be counted, it was one hundred and fifty per minute.

In marked contrast to the radial pulsations, the contractions of the heart were strong. The apex beat was visible to the eye and perceptible to the touch.

Auscultation revealed a diastolic mur-

mur over the aortic valves, indicating insufficiency and consequent regurgitation.

The heart, equal to its task before the accident, was unable properly to perform its functions under the new conditions.

The question, of course, arose whether there was any reasonable prospect that the patient could survive a laparotomy for cleansing the peritoneal cavity and closing the wounds of the intestines. It was evident to me that, in his moribund condition, the operation would only hasten the fatal termination. It was therefore not performed.

The patient died in about thirty hours without reacting from the shock.

The post-mortem examination, as made by the county physician, showed that the bullet, entering the body an inch and a half to the left of the median line, at the lower border of the ninth rib, passed almost directly downward through the anterior edge of the diaphragm, perforated the small intestine in two places, passed through the ala of the ilium and lodged behind the great trochanter.

There was considerable clotted blood, but no fecal matter in the peritoneal cavity. The peritoneum was not inflamed.

Possibly an operation, immediately after the injury and before the patient was weakened by traveling and by the loss of blood, would have been successful.

GONORRHŒAL PERITONITIS.

BY J. E GREENE, M. D., MISHAWAKA, INDIANA.

[Read before the Mississippi Valley Medical Association in annual session at Crab Apple Springs, Ky., July 12-15, 1887.]

I DOUBT if I could present to your consideration a subject of more importance or less interest than gonorrhœal peritonitis, and in doing so I do not expect to present anything new; but if I can cast a light upon the subject that will cause you to see the gravity and dangers of a simple gonorrhœa I will have accomplished all I hope for.

Gonorrhœa *per se*. is one of our common complaints, and being common is treated as a simple local affection, with too little thought of the possible dangerous *sequelæ*. Even the laity pretend to skill in its treatment; and we as physicians too often say, "but a simple, uncomplicated case of gonorrhœa."

I do not understand how any disease can complicate gonorrhœa, but I can very readily understand how gonorrhœa may complicate many other affections. And while I speak of gonorrhœa simplex (?), in this article it is simply as a preface, and not that I expect to teach you anything in regard to its etiology or treatment.

A secretion procured in non-specific urethritis or vaginitis may be acid in its reaction on litmus. A specific, or gonorrhœal inflammation of any part always causes an acid secretion; the gonococci cannot live in an alkaline menstruum, they travel along a mucous tract rapidly and from choice. I have frequently experimented with gonorrhœal pus, by vaccination in the true skin; and saving to sometimes set up a slight circumscribed dermatitis I have seen no proof that the disease is inoculable on parts of the body other than the mucous tract of the genital organs. You have doubtless seen cases of gonorrhœal ophthalmia, with ulcerated or perforated cornea. The ulcer on the cornea is self-limited, but that limit is not reached until perforation has taken place. I do not mean that perforation is the end wrought by the micrococci, but that the destruction of tissue is so rapid that perforation is merely a mile stone on the road of its action.

Infection of the genital tract is a dangerous affection, and while in the majority of cases "a clap is no worse than a bad cold," no individual ever had the clap that did not have the shadow of a great danger hanging over him.

Gonorrhœal peritonitis presents essentially the same symptoms as a peritonitis from other causes. The symptoms may be more severe, and the progress more rapid, as the cause is more active than many other causes of peritonitis. It is not necessary to give you the symptoms or pathology of peritonitis. You know them too well to mistake them, and see causes too often to mistake them.

I have seen many cases of gonorrhœal epididymitis, and I affirm that not one ever entirely recovered. In 1875 I was called to treat a youth for gonorrhœal epididymitis. He had a mild peritonitis as well. He made an apparent rapid and perfect recovery. In 18 7 he called upon me for advice, complaining of soreness of the bowels. Examination showed a sub-acute, or rather a chronic inflammation of the peritoneum. He told me that since his attack of epididymitis in 1875 he always had a return of abdominal soreness in cold, damp weather, or upon the least excess of any kind.

Another patient contracted gonorrhœa in the summer of 1884. He treated himself, and presumed he was well. Six months after the cessation of the discharge, and three months after any exposure he consulted me. He complained as the previous patient had, of a pain in the abdomen. Examination revealed a tender, slightly swollen testicle. In twelve hours thereafter the testicle was terribly sore and swollen, abdomen tender and somewhat tympanitic, tongue red and dry, temperature 103° He remained in that condition for 48 hours, when there commenced a discharge of pus from the urethra which gradually increased in quantity until it became copious. His epididymitis and peritonitis gradually subsided; he also made an apparent recovery — only apparent, however, for he frequently consults me, always complaining that bad weather causes pain and soreness in the abdomen. I had no means of making a scientific test for gonococci in the pus he discharged per urethram, but I applied some of it to the eye of a dog, and it set up an acute ophthalmia which went on to perforation.

This last case would tend to prove the theory advanced by Noeggareth — which I firmly believe — that gonorrhœa is never entirely cured.

The two cases just cited are in my opinion chronic gonorrhœal peritonitis, and are but types of many others that have fallen under my observation. I have never known a death in the male from peritonitis caused by gonorrhœal infection, although several of our authors cite cases of that kind followed by death.

Whether the germ passes through the vas deferens or semina vesicles to the peritoneum does not matter, either being the high road. In the female the gonococci proceed up through the uterus, through the fallopian tubes to the peritoneum — not in all cases, to be sure, but in many. And while the main symptoms are those pertaining to salpingitis, particularly pyo-salpinx, there is always a peritonitis, circumscribed or general.

In 1879 I was called to treat a lady for puritus vulvæ and leucorrhœa. Examination convinced me that I had a case of gonorrhœa to deal with, and the diagnosis was confirmed by the husband confessing to me that he had had gonorrhœa, and had during the continuance of the discharge, frequent connections with his wife. He also informed me that he had been told by his physician that as his wife was pregnant there was no danger of communicating the disease to her.

Within a few days she miscarried with a six months fœtus. She soon showed symptoms of salpingitis, which was soon followed by a severe attack of peritonitis. Since that time she has been an invalid. At times she is apparently well, often she is confined to her bed with peritoneal inflammation. Refusing any but medical treatment that is far from satisfactory, her condition is one of constant anxiety and danger. Unforeseen and unexpected causes too frequently light the fire of dormant inflammation. It is a sad case, and she is a sufferer indeed.

In 1877 I treated a young married woman for gonorrhœal inflammation of the fallopian tubes and peritoneum.

About a year before marriage her husband had had gonorrhœa, but supposed himself well. He had no urethritis or discharge from the urethra, and she had never had leucorrhœa or vaginitis. This was a case I believe of latent gonorrhœa communicated from the husband. She made an apparent recovery, as they nearly all do, but only yesterday — June 31 — I was summoned to Cincinnati to make a laparotomy upon her, not to save her life, but to relieve terrible and long-continued suffering. I have not yet operated but expect to within the next month.

I do not believe that the gonococci propagate upon the peritoneum, that is a serous membrane, and I do not think it furnishes food enough suitable for the micrococci, but they do propagate within the fallopian tubes, pus, or the abnormal secretion of the tubes which escapes through the fimbria, and thus sets up and keeps up the peritoneal inflammation.

May 1, 1887, I was consulted by a girl aged 19, who complained of extreme soreness in both ovarian regions. She strongly denied having had intercourse, as well as having a vaginal discharge. I suspected gonorrhœa, or that she had had a miscarriage, but she would acknowledge neither. The ovaritis continued to grow worse, and by May 15 she was confined to her bed with peritonitis. She even then maintained her former assertion as to her chastity. By June 4 she was able to sit up, and continued to improve until June 18, when she walked a long distance, and was that evening again compelled to take to her bed. She called no physician until June 23, when I visited her. I found her pulse 160, temperature 105, skin cool and moist, though not cold and clammy, lips blue, *eyes bright;* tongue coated with a brown, moist, thick fur; abdomen tympanitic, and tender, slight cough and dyspnœa. She then acknowledged her exposure, and submitted to a vaginal examination. There was a copious greenish yellow pus discharging from the vagina, the os was inflamed and granular, while from the uterine cavity there was a bloody pus slowly oozing. I was satisfied that the fallopian tubes were filled with pus, also that there was pus in the peritoneal cavity. She was dying from septicæmia. I urged laparotomy for the purpose of removing one cause of blood poisoning, and hoped to be able thereby to save her life. She, as well as the family, objected, and after prescribing I left her. On the morning of June 24 I found her with pulse 120, temperature 101, skin cool and more moist than yesterday, lips slightly redder, tongue cleaner, abdomen tympanitic almost to bursting, countenance very anxious, eyes very bright, and the abdominal pains almost beyond endurance. I prognosticated death within twelve hours, unless she obtained relief. She and her family were anxious for abdominal section, and as a *dernier resort* I consented, though promising nothing. At 2 P. M., assisted by Drs. Thorp and Van Pelt and medical student, Butterworth, I proceeded to operate. After passing through the linea alba, I came upon a thickened and inflamed peritoneum, tense and protruding through the wound already made. I made a puncture through it, when out, spurted with considerable force, pus and serum. I quickly enlarged the incision to about two inches, through which poured pus, serum and broken-down tissue, to the amount, by estimate, of at least three quarts. The odor was horrible. After the evacuation I examined the cavity. I found the fallopian tubes filled with pus and greatly distended; upon the ovaries I found several abscesses from the size of a pea to to the size of a filbert, all filled with pus. The peritoneum was thickened and showed many granular spots. The intestines were distended somewhat with gas, and they, too, in places showed granular spots. Adhesions had formed in many places, but they were not firm. After making as thorough a toilet as possible I closed the wound in the usual manner, leaving in the lower angle a drainage tube. She reacted well, coming soon from under the influence of the anæsthetic, She expressed herself as greatly relieved by the removal of the tension caused by the tympanitis, but I could see she was

growing weaker. The skin remained cold although the extremities were warmer, the sweating increased, the lips became a darker blue, the cough and dyspnœa increased. I left her at 8 o'clock P. M. At half-past eleven she died, her mind clear up to the last moment of her life.

I do not think the death was hastened one second by the operation, though I do think that, had I seen her and operated on the 22d, her life would probably have been saved. She died of septicœmia, that might have been controlled if I had earlier removed the cause. The treatment medicinally of gonorrhœal peritonitis differs in no manner from the treatment of peritonitis from other causes, saving perhaps that antiphlogistics are more urgently called for. To my mind surgery offers the most rational mode of treatment, and at the same time promises the most favorable results.

I would not in all cases make a laparotomy, yet whenever the inflammation was active, tympanitis great, and temperature high, I would not hesitate to make an incision through the abdominal walls, clean out the cavity, and insert a drainage tube. In the female I would particularly urge surgical interference, either in acute or chronic cases. If the uterine appendages are affected I would remove them. By so doing the danger to life would not be so materially increased from the operation, and the prospect of complete recovery is too flattering to pass by. Not only would I open the abdomen for gonorrhœal peritonitis, but as well in all cases of severe peritoneal inflammation where I am reasonably sure that there is a serous effusion of dangerous amount within the cavity. I have not yet to regret making the operation, but I do regret not doing so in many cases; I am confident that lives have been lost that might have been saved by timely surgical measures.

In closing, I would particularly urge my professional brethren to consider the gravity of gonorrhœa, and to closely investigate the promises of cure of peritonitis by larapotomy.

TRANSVERSE FRACTURE OF THE PATELLA.

BY J. Y. BROWN, M. D., HENDERSON, KY.

[Read before the Mississippi Valley Medical Society, in Annual Session at Crab Orchard Springs, July 12-15, 1887.]

I KNOW of no subject in the whole range of surgery which has been more thoroughly studied, both in regard to its pathology and treatment, than that of transverse fracture of the patella; and until very recently no satisfactory explanation has ever been offered to throw light upon the cause of non-osseous union which practically exists in nearly all cases of transverse fracture of this bone. From the birth of surgery to the present day, theory after theory has been advanced in explanation of this constantly existing result; and although each has seemingly been well sustained by anatomical, physiological and pathological facts, all alike have been disproven, and until within the last two years none could assign a cause and prove it. As has been the pathology, even worse has been the treatment; and but for the introduction of modern antiseptic surgery, it would have remained in that deplorable state, alike unsatisfactory to surgeon and patient, unscientific from the standpoint of modern investigations, and in some respects barbarous. As the views concerning both the pathology and treatment of this fracture have undergone so marked a change in the last two years, a separate consideration of the two subjects will, I trust, prove interesting to the society. I shall, therefore, first briefly consider its pathology from a modern

standpoint, and afterwards the treatment.

An able article published in the March number, for 1887, of *The Annals of Surgery*, by Macewen of Glasgow, on "The Pathology of Transverse Fracture of the Patella," brings forward a most scientific and satisfactory explanation of the cause of non-osseous union in these cases; and in this he not only proves the correctness of his own views, but thoroughly disproves all pre-existing theories in regard to this matter. He opens his paper with an anatomical consideration of the knee-joint, laying especial stress on the point of insertion of the quadriceps extensor tendon and the anatomical distribution of the præpatella aponeurosis. In a series of anatomical dissections he illustrates the fact that the "tendon of quadriceps is for the most part inserted into the groove on the upper part of the patella, the strong aponeurosis being attached to its sides, while the ligamentum patellæ arises chiefly from its lower border." He shows that over the center of the anterior surface of the patellæ, continuous with the tendon of the quadriceps above and the ligamentum patellæ below, there exists a distinct band of aponeurotic tisuse, completely covering the surface of the bone. Ten normal patellæ submitted to examination by Macewen showed the constancy of this aponeurosis; and I myself have made an examination of five cases in regard to this fact, and in each have found it as above described. Any one who will take the trouble to make this dissection can readily demonstrate to his thorough satisfaction both the point of insertion of the quadriceps tendon and the anatomical distribution of the præpatella structure, which play so important a part in the pathology of the fracture.

Now, it is well known that transverse fracture of the patella is in the majority of cases caused by violent muscular action, while in the attempt of maintaining an equilibrium during the act of falling. "The powerful force of the quadriceps causes the patella to be jerked upwards, relatively to the former, beyond the position where it usually rests, supported laterally by the femora-patella surface. The patella being held below by the power of the ligamentum patella, rests on the apex of its posterior vertical ridge, which thus becomes the point upon which is developed the greatest energy of the two opposing forces,—that of the contraction of the quadriceps on the one side, and the weight of the body on the other." When fracture occurs in the quadriceps tendon the upper fragment becomes tilted, so that the fracture surface presents anteriorly. Thus the shreds become entangled in the spicula of the fractured bone, and the soft parts are drawn into the interspace, by the flexing of the joint and the atmospheric pressure; hence, it is plain that with these structures between the fragments, together with the floor of the patella bursæ, approximation of the fragments is rendered impracticable. Consequently osseous union with this condition is impossible; fibrous union will be seriously modified. Now, the views of Doctor Macewen herein stated, are *not conclusions drawn from theoretical reasoning, but au facto* the fibrous aponeurosis,being more elastic than the bone, bridges over the interspace between the two fragments, and should the force be sufficently great, this aponeurosis ruptures and hangs in shreds of variable lengths which are forced into the hiatus between the fractured bone. When fracture occurs the præpatella structures,—viz., the fibrous aponeurotic tissue and floor of the patellæ bursæ become stretched and ruptured; and by reason of the flexed position of the joint, influence of atmospheric pressure, and the position of the upper fragment, these structures are forced into the hiatus and an irreducible separation is brought about. Prior to Macewen's investigation of this subject, there were three causes assigned, in explanation of non-osseous union in this fracture, all of which he considers and scientifically refutes. Although it may appear superfluous to consider here these theories—for truly the pathology as it now stands can but be clear and conclusive to the mind of every surgeon—still, it is a matter of some interest and may as well be considered.

In all works on surgery, non-osseous

union has been attributed, first of all, to insufficient blood-supply to the patella, thereby causing a low vitality of the bone and rendering the out-pouring of ossific deposits, which enter prematurely into the repair of every fracture, poor and scanty. Now, this assumption is absolutely without foundation, for it has been shown by injected specimens that the blood-supply to this bone is not only abundant, but thoroughly distributed. Any one who has ever seen a joint opened in viewing this fracture, can bear evidence of this fact from the abundant parenchymatous hæmorrhage which ensues from the cancellated tissue of the fracture bone. Again in longitudinal fracture of this bone osseous union is the rule; and in rare cases of transverse fracture a like result follows; hence, were the above true, such a result would be impossible.

Not only is the parenchymatous hæmorrhage great in these cases, but, hæmorrhage is at times seen. Neither my collegues nor myself have been able to find mention of this fact in literature, but a case in point gives abundant proof. In a resection of the knee-joint made by Doctors Jenkins and Dixon after Volkman's method, and in which I was kindly invited to assist, the arterial hæmorrhage after the patella had been sawn through was so great that the Paquelin cautery had to be resorted to. How often this condition is present I am unable to say. Be this as it may, the fact still remains and is thoroughly substantiated, that the patella is abundantly supplied with blood, and the theory of insufficent blood-supply can be excluded from the hitherto presumably existing causes of non-osseous union.

Second, contraction of the quadriceps extensor tendon, which separates the fragment by pulling on the proximal one, may in some respects prevent union, if no attempt at reduction be made; but reduction is easy when properly practiced, consequently this alike with the first can be excluded.

Third, and lastly, the effusion of blood and serum into the joint, causing distension, and thereby separation, has been brought forward as a cause. The rapid absorption of this material renders its presence of little importance in the prevention of osseous union. Blood is a constant factor in every fracture, and forms, as is well known, one of the media of repair. Hence, by exclusion, we arrive at the true pathology of this fracture, and it only remains to adopt a proper method of treatment, based on these anatomical and pathological conclusions.

It is evident, if we accept Macewen's views of the pathology of this fracture, that none of the previous methods of treatment offer more than the prospect of an unsatisfactory result. Ligamentous union is all we can expect, and frequently we fail even in obtaining this, even granting that strong ligamentous union is gotten, partial or complete anchylosis is concomitant, and efforts at passive motion are accompanied by a stretching of the ligamentous band of union, thereby producing wide separation of the fragments and a necessary weakening and impaired function of the joint. On the contrary, should this more favorable union not occur, the condition is even worse, the fragments are then united by a thickening of the aponeurotic structures in front of the bone, and this condition—to quote Erichsen—always leaves a weakened limb and an unprotected joint. In consequence of the separation of the fragments and the folding of the bursæ, the fingers can be thrust in between the articular surfaces of the knee. It is true, anchylosis by manipulation and passive motion can be overcome, but it is accomplished by a stretching of the bond of union and a consequent separation of the fragments, so that even though mobility be completely restored, the joint is left in so weak a condition that it is relatively of little more value than one in an anchylosed state. This is no melancholy picture of the results to be expected from the ordinary methods of treatment. On this point all authorities agree, and doubtless there are many of you here present who can add a like experience to these. It would be useless to consider here all the manifold apparatus and devices which have been and are still being used in the treatment of these fractures

They are all adjusted with the same object; and, while they differ slightly in construction, the principle is the same; therefore what is said of one will apply alike to all.

In the repair of every fracture, osseous union is dependent primarily upon two conditions: First, it is necessary that the fragments be adjusted; and second, that they be maintained in position by some properly applied splint or bandage or by other means which I shall mention further on. Now, by any of the ordinary methods of treatment, neither of these conditions can be fulfilled, consequently the treatment promises little or nothing. After days of suffering and months of confinement the patient is left to lament a crippled condition and the pleasant anticipation of a big doctor's bill. The impossibility of getting osseous union by these methods is proven by results, as is the cause, by the pathology. It may be well to state here that I shall advocate in this paper the operation of opening the joint and wiring the fragments, contending that the idications and contra-indications are the same as those which govern us in the performance of any surgical operation, and that by this means only can we expect to get ideal results. I am well aware that on this point there is considerable diversity of opinion, but, after a careful examination of the results and mortality following, both lines of treatment, I am thoroughly satisfied that the operation of suturing the patella fragments, in the hands of a good man, is equally as safe, if not safer, than some of the former methods of treatment, and statistics show that results are incomparably better. As I before stated, all methods of treatment proposed for this fracture have for their object the accomplishment of two conditions, viz: Approximation of the fragments and the retention of them in position when approximated. Now, a glance at the pathology of this fracture will show that to accomplish this the joint must be opened, for unless the præpatella structures are removed from between the fragments approximation is impossible and osseous union is never gotten. All of you are more or less familiar with the usually recommended form of treatment laid down in most works on surgery. A consideration of them now would therefore be superfluous—all, with the exception of one, have this in their favor, namely, they are safe; and while they can accomplish comparatively little in the shape of good, they in no way endanger the life of the patient.

Before summing up the dangers and results to be expected from the two courses of treatment, I cannot refrain from making a few criticisms on the use of the malgaigne's hooks, a relic of barbarism which I trusted had long since been relegated to the tombs of antiquarian remains; but, to my surprise I find in the last edition of that scientific and ably edited journal, the *Annals of Surgery*, an article by Dr. Buchmore, Professor of Surgery in the Long Island College Hospital, in which he not only recommends them, but urges their use. Wherein there appears any advantages over other means of treatment, I fail to see; and certainly the tortures and dangers to which they subject a patient, should exclude them from the armamentarium of all scientific surgeons. Osseous union has never been gotten by this means of treatment, nor is it possible that such could result. Erysipelas necrosis and separation have been known to follow their use, and this, together with the pain in applying them and the absolute nothing in point of result which their application promises, is certainly sufficient ground to warrant a suit for malpractice, in case any complication should come up resulting from such treatment.

From this let us proceed to a general consideration of the two plans of treatment, viz.: That which consists of splints, hooks, bandages and the like, is that which consists in opening the joint and wiring the broken fragments. First, by adopting any of the former methods of treatment, what is the surgeon to expect? This question is easily answered; non osseous union in every case; a weak joint; and in nearly all cases, partial or complete anchylosis. On the contrary, should the fragments be wired, a prognosis of rapid recovery; osseous union;

and in almost every case, a complete restoration of the functions of the joint. I know there are many who contend that the operation is unsafe, but this statement cannot be substantiated. Has it not been proven that all inflammation is due to infection, and that, wherever pus is found, micro-organisms are present? Can we not say that by a thorough carrying out of the principles of antiseptic surgery this can be prevented, and by excluding infection, the operation is, comparatively speaking, dangerless. With the safeguard which antiseptics hold out against infection and the modern improvements in surgical technique, on surgeon can hesitate a moment in performing this operation. Let due care be taken in the thorough carying out of the antiseptic technique involved in the operation, and a favorable prognosis can be given in every case and the life of the patient is in no ways endangered. Should we hesitate in the performance of a surgical operation on the grounds of its being dangerous, and operate only on those cases devoid of danger, surgical science would dwindle down to the administration of drugs, for truly the simple exploration of a knee-joint is far more dangerous than wiring the patella when scientifically performed. No, the argument of danger can only be brought forward against the operation by those who are unfamiliar with and who disregard the teachings of antiseptic surgery. The operation in itself is an exceedingly simple one, success depending entirely on the antiseptic technique. It has been done any number of times, and I have been unable to find report of any complication occurring, when due respect had been paid to the drainage and after-dressing.

FOREIGN CORRESPONDENCE.

To the Editor of the Chicago Medical Journal and Examiner:

THE Fifty-fifth Annual Meeting of the British Medical Association was held in Dublin during the first week of August of this year. The membership of the Association now numbers 12,000, having increased four fold in twenty years. The president for this year is Dr. John T. Banks. His inaugural address was devoted chiefly to a discussion of matters of local interest. He declined to discuss the question of the expediency of women entering the medical profession. He said that the Royal University had no discretion in the matter, and that the College of Physicians and Surgeons had voluntarily thrown open its doors to, and and afforded them every opportunity. Last year the degree of B. A. was conferred upon nine women, four of them taking honors.

The work of the Association is done in sections.

In the section on

PUBLIC MEDICINE,

Sir Thomas Crawford, president of the section, said that diplomas in sanitary science, public health, etc., must sooner or later be recognized as one of the necessary qualifications of medical men. He thought it desirable that there should be uniformity of title as to the registration and qualification of medical men under this head. It was by no means unusual in these latter days to hear the champions of sanitary science boast, and justly boast, of the perceptible prolongation of life which has been secured through the beneficial effects of improved sanitary arrangements. But there was, he said, evidence of perceptible deterioration or degradation of life in the lower order of people. He had before him an analysis of the results of 32,324 examinations of men made by army surgeons from 1860 to 1864 inclusive.

A careful examination of these tables led to the inference that the lower class, from whom the recruits for the army are chiefly taken, are of an inferior physique now to what they were twenty-five years ago. The recruits drawn from town-bred populations gave by far the larger

proportion of rejections, whilst the causes of rejections usually indicate a decidedly inferior physique.

The rejections from defective vision and diseases of the eyes were nearly 42 per 1,000, exclusive of all those whose defects of vision were so obvious as to attract the notice of the recruiter and who would be thus excluded.

There was a peculiar form of ophthalmia which, wherever it was met with, whether in military or civil life, was mainly caused by the vitiated atmosphere arising from over crowding. Of late years that scourge had been practically banished by the sanitary improvements that have been introduced into barracks. It was to his mind the most striking illustration of what such measures could accomplish, and there was no longer any excuse for the existence of the disease. As regards the question of epidemics properly so-called, they could hardly hope to meet the requirements of the case by any system of isolation. Quarantine in such cases was not only a waste of time, money and energy, it was also a cause of much unnecessary suffering to the sick and danger to the healthy.

The event of great interest in the section on

MEDICINE

was the address of the president of the section, Professor Gairdner.

The address dealt briefly with the various methods of healing, and then discussed at length the point whether the practice of medicine—that is, the art as distinguished from the science—had made a single step since Hippocrates. The progress of modern medicine since Cullen's time, he said, had been in the direction of stability not possessed by the art of medicine in any previous stage of its progress. As regards that great revolution in medical treatment of fevers and inflammations, which in some minds occupied in relation to medicine as advanced a position as antisepticism did in relation to surgery, he declared that while he had no doubt at all as to the advantage in some cases, and in a limited sense, of the so-called anti-pyretic or antithermic treatment, he had yet to be convinced of the advantage of its application as a routine in typhoid or in any other fever; but it might be readily conceded that both in typhoid fever and pneumonia, as previously treated in German hospitals, with an enormously high mortality, the method in question marked a distinct advance. But he had never ceased to hold, as a teacher of medicine, that all the fermentation of opinion, so to speak, with respect to current remedies and modes of treatment, all tokens of unrest and dissatisfaction, were in reality an advantage to the medical art, and tended both toward progress and stability. The prevention and cure of disease were not, indeed, identical; but the laws which guided the former were in a large measure and necessarily applicable to the latter. The same noxious influences which begot typhoid, for example, tended in a remarkable degree to exaggerate, if not to cause, a host of minor diseases. The same over crowding which was in a great degree the cause of typhoid fever, was a source in hospital wards of pyæmia and erysipelas, in barracks and jails of consumption (and this often among picked men), in certain endemic localities of contagious pneumonia, and probably of diphtheria.

It was impossible in the face of modern sanitation to escape the conclusion that the causes and remedies of disease alike were often to be sought more in the study of groups, and even of multitudes of cases, than the ordinary text-books or in other conventional remedies. In short, the treatment of diseases of every kind had been largely, even if silently, influenced by the thought that the chief disease-breeding factors must also be in individual cases adverse influences to be carefully studied and kept in check by those who would cure disease, and that in chronic cases especially, a large part of the cure consisted in the removal or modification of the injurious action of the causes.

In the section on

SURGERY,

Sir George Porter, presided.

The discussion on the radical cure of hernia, freely participated in, was chiefly confined to descriptions of various

methods employed by the several gentlemen speaking.

Sir Spencer Wells read a paper in which he expressed a preference for Porro's operation over Cæsarian section. Dr. W. H. Allingham read a paper on "The Advantages of Inguinal Colotomy over the Lumbar Operation." The other work in the surgical section was not of special interest.

A communication from Dr. Playfair was read in the section on

OBSTETRICS,

in which he maintained that all puerperal diseases are of septic origin. In the discussion Drs. Lawson Tait, Kidd and Mone-Madden maintained that some such cases are not septic.

Dr. Apostoli read a paper on "Electric Treatment of Fibroid Tumors," which was favorably discussed by Dr. Playfair and Sir Spencer Wells.

The paper by Dr. Sinclair, of Boston, U. S. A., on "Manual Dilatation" was very favorably received.

A number of cases were reported in the section on

PSYCHOLOGICAL MEDICINE,

tending to show that treatment by galvanism may be curative in some forms of insanity.

The work in the other sections was not of special interest to American readers.

Professor Gairdner was elected president of the society for the next meeting, which will be held in Glasgow in 1888.

WM. B. MEANY, M. D.

LONDON, England.

Mr. Editor of the Chicago Medical Journal and Examiner:

THE obsterical clinique at Pammatone Hospital in Genoa has just closed, and a few notes taken from it will not fail, I hope, to be of interest to your readers. The clinique was opened on Nov. 11th, 1886, and was closed on June 24th, 1887. There have been admitted 118 women; of these 106 gave birth to children, five left the hospital before going through labor, six remained in the hospital at the time of its closure, and one showed symptoms of abortion. Many pregnancies were complicated with pulmonary tuberculosis, syphilis, enormous œdema of the lower extremities, epilepsy, varicose swellings, bronchitis, mania, and hæmorrhoids. Three gave birth to twins; 60 were unmarried, 16 widows, 52 primiparæ, 66 multiparæ, and some were public prostitutes.

The vertex presentations were 83, facial, 3, and pelvic, 7. Premature births were six, and one abortion. Professor Pajot's forceps were used four times in cranial presentations; once only was version resorted to for a trunk presentation, in a twin pregnancy.

In one of the three named twin gestations there was found a male and a female with double presentation of the vertex; in another, a male and a female with a presentation of the cranium and with a presentation of the nates; in the third, two females, one of whom presented with the hips, and the other with the right shoulder and procidentia of the corresponding hand.

The amniotic sac, because of its resistance, had to be broken, artificially, four times. The shortest umbilical cord was 27 centimeters, the longest 103 centimeters; the cord was once knotted, twice prolapsed, and 28 times coiled around the neck of the child.

Of the children, one had hydrocephalus, and another was affected with anencephalia and spina bifida in the cervical regions.

Many labors were complicated with metrorrhagia due to uterine inertia, treated with ergot, quinine, electricity, wine, and Credé's method.

The puerperium was also complicated with eclampsia, peritonitis, mania, metrorrhagia, agalaxia, mastitis, fissured nipples, etc.

Two deaths occurred in 118 patients; one during labor, bloodless, and anæmic and without being liberated; the other by typhoid fever, fourteen days after a compound and artificial labor.

Of the new-born, some showed slight jaundice, and quite often many were affected with purulent ophthalmia, due to cold and insufficient nutrition; Neisser's gonococcus was not found. Five died of inanition, although nursed in suitable

cradles according to the Parisian method.

On page 513 of the second volume of the "Practical Treatise on Obstetrics," by A. Charpentier, we read: "When, during pregnancy, one is convinced that a trunk presentation exists, cephalic version must be performed and maintained by all possible means." This practice and teaching Professor Macari does not approve. He criticises and condemns it. In a case of trunk presentation, the professor followed his own plan of *letting alone and waiting*.

On the 3d of last January a woman 33 years old, married, multipara, of a lymphatic and highly nervous constitution, was admitted into the obstetrical ward. She was in the seventh month of her sixth gestation; her first four pregnancies ended in premature, spontaneous labors, the fifth terminated normally. An irregular presentation of the fœtus was suspected. An accurate examination was made by inspection, palptation, percussion, abdominal ausculation, vaginal examination and pelvimetry. It was found that the patient had a simple uterine pregnancy, with living fœtus; oblique presentation, right shoulder in the second position, with the head to the right, lower than the pelvic extremity of the fœtus. The maternal pelvis was regularly developed. The professor concluded to wait, and abstain from any operative act.

After some time the same diagnosis was confirmed, and it was again decided *to wait*.

On the 9th of March labor began. By vaginal examination there was found a cranial presentation. At 9:45 P. M. of the same day the patient gave birth to a mature fœtus, male, sound and healthy, 56 centimeters long, 3,900 grams in weight; vertex presentation in second position; length of labor, 30 hours.

Professor Francisco Macari holds the Chair of Obstetrics and Gynæcology in the University of Genoa, and is director of the obstetrical clinique. His lectures are largely attended by students and midwives, for they are practical full of common sense. His work on obstetrics, gynæcology and pediatrics is concise and well written. It has been translated into French and German, and has been honored with three editions. Professor Macari doesn't think much of germs. During the cholera epidemic of Genoa, two years ago, he offered to swallow a certain amount of comma-bacilli to prove their innocuosness.

Professors M. Semmola of Naples, and F. Durante of Rome, will be the Italian delegates to the International Medical Congress at Washington next September. Professor Semmola is preparing an important paper on bacteriology. Professor Durante will protract his visit two months, having been ordered by his government to make a scientific tour through the United States; to visit hospitals and medical institutions, and to make a report. The Professor holds the Chair of Surgery at Rome, and enjoys a widespread and well-deserved reputation for his bold and skillful operations. He is a fine looking man and a fluent speaker. Chicago, always foremost and so well known for noble enterprises and generous hospitality, will not fail, I hope, to entertain and render due honors, to the brilliant surgeon of our Eternal City.

A. LAGORIO.

CHIAVARI, ITALY, July 10th, 1887.

EDITORIAL.

NINTH INTERNATIONAL MEDICAL CONGRESS.

The time is now near when the next International Medical Congress—the ninth triennial—will convene in Washington. As this will be the first one of them to meet in America, it is gratifying to find that the indications at present are that it will be a very successful one. The announcements already made of the scientific work to be done show no lack of interest, on the part of the medical world, in the object for which the congress meets. Many of the names announced include in their number men of such standing in the profession of medicine as are a guarantee that much of the work will be of a high scientific character. From a numerical standpoint, the registry-list to this date indicates that the attendance will be of the largest of any congress yet held, and embraces the names of several hundred Europeans, as well as of those of other foreign countries. The local committee of arrangements has been untiring in an effort to have the social feature of it in keeping with the greatness of the occasion, although the time of the year at which the congress will be held makes it an unfavorable one, socially, in Washington. The programme, as announced, embraces in addition to the social entertainments in the city, an excursion to Mount Vernon, and one, for the foreign members to Niagara Falls, with an escort of some of the committeee of arrangements.

Arrangements have been made with the principal ocean steamship companies for reduction of rates for those who will attend the congress, as well as for members of their families who may accompany them. A similar reduction has been made by the most important railroads of this country, and special excursion rates for a round-trip across the Continent for those who may wish to visit the Pacific Coast, after the adjournment of the congress. A committee of reception has been organized in each of the cities of New York, Philadelphia, Boston and Baltimore to aid foreign members of the congress, on their arrival, in their efforts to obtain requisite information regarding matters connected with the congress. In New York, the Hoffman House has been selected as the headquarters of the reception committee, and a Bureau of Information organized, under the supervision of members of that committee.

Careful effort has been made by all officials connected in any way with the congress to anticipate, and to provide, as far as practicable, for the needs of all of the large numbers who are expected to attend the great congress.

It will doubtless be the greatest event for the medical men of America that this country has seen, and all will hope that nothing may occur to mar the occasion to which so many of the medical world are now looking forward with so much hope and such pleasant anticipation.

TYROTOXICON IN FOOD.

At the meeting of the Michigan State Board of Health, April last, Professor Victor C. Vaughan, made a report on tyrotoxicon, which he has found in poison chesse, milk, ice cream and oysters, and an abstract of this report has been published, by the Board, in advance of the annual report, which will contain the paper in full.

Professor Vaughan has established the identity of tyrotoxicon and diazobenzole, and he thinks that the latter, or some closely allied substance, will be found in all those foods which, from putrefactive changes, produce nausea, vomiting and diarrhœa. He further thinks that while tyrotoxicon is not the only poison which may be developed in milk, and that while decomposed milk is not the only cause of the summer diarrhœas of children, the rational and imperative demand in such cases in milk-fed children is to stop feeding milk in any form. He recommends as food substitutes, chicken and mutton

broths, meat juice, and rice or barley water.

The abstract contains Prof. Vaughan's rules for the prevention of the development of tyrotoxicon in milk. They are very good and thorough, but compliance with them in large cities with present methods and prices is impracticable.

BACTERIA AND TETANUS.

In the November number of this journal, for 1882, a paper by Dr. Lester Curtis appeared, describing micro-organisms found in the blood of a tetanus patient. Up to that time no mention seems to have been made of any such organism in connection with this disease.

No direct conclusions were drawn from the observations then reported, but the impression conveyed was not favorable to the causation of the disease by the bacteria described, since they did not diminish in number with the improvement of the symptoms, and continued to exist in the blood after recovery was complete. They were shown in blood, freshly drawn from the finger, at a meeting of the Illinois State Microscopical Society, some weeks after the patient had resumed work and was apparently perfectly well. Since that time, in Europe, considerable attention has been drawn to the connection of micro-organisms and tetanus, but the statements of different observers by no means agree. A recent article by Doctor Bellmer, extending through two numbers of the *Berliner Klinische Wochenschrift*, for July 25th and August 1st, has recalled attention to the subject. The writer reports two cases of tetanus resulting in death; one of a man from a splinter of wood under the finger nail—the other, of a boy who drove a small piece of a sharp stone into the foot while going barefoot. In each of these cases inoculation-experiments were made with mice and guinea pigs. Splinters from the wood were trust into the sub-cutaneous tissue.

In the case of the boy, bits of the tissue from the neighborhood of the wound were inserted under the skin, and also samples of the earth from the playground where he received his injury. In every case tetanus followed. There seems, from these experiments, to be some evidence of toxic influence of the wood and the earth, although no mention is made of any control-experiments to remove doubt as to the possibility of other sources of the poison, as, for instance, impurities floating in the air.

Two sorts of bacteria are mentioned as having been found in the tissues of the patients: one a bacillus, and the other a micrococcus, both of which, so far as we can gather from the description, which is not very minute, and is without illustration, were described in Doctor Curtis' paper. The proof of the connection of these bacteria with the disease is promised but not given.

In this connection it may be remarked that Doctor Brieger (*Berliner Klinische Wochenschrift*, April 25th, 1887) claims to have shown that several compounds belonging to the ptomaines produce tetanic symptoms, but that one in particular, which he names—"tetanin"—is the cause of the symptoms of tetanus. This substance seems to have been produced by the growth of bacteria. In this indirect way, bacteria may be the cause of the disease, though in themselves and apart from their product they may be harmless.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

THE Thirteenth Annual meeting of this society occurred July 13th, 14th, and 15th, 1887, at Crab Orchard Springs, Kentucky.

Dr. John E. Link read a paper detailing three cases of gun-shot wounds of the abdomen; two recovered without surgical interference and one with such interference, and he claimed:

1. An abdominal wound should be probed only with a grooved-director as a guide to the scalpel.

2. Any wound of this cavity and viscera may recover with fixation, narcotization, and abstinence from food.

3. The cavity of the abdomen may be invaded by the surgeon in recent injuries as well as for other conditions. His use of opium was to relieve pain and to secure rest for the bowel.

In the discussion which followed, the weight of opinion was in favor of laparotomy in all cases of penetrating wounds of the abdomen. The majority who discussed the paper believed in the use of opium. Some condemned it, and advocated purgatives according to Tait's method,

The annual address of the president of the society, Dr. I. N. Love, under the title "The Pressing Needs of the Profes sion," discussed the necessity for a highe standard in medical education, the exr cessive number of medical colleges in this country, and the desirability of a union of all schools of medicine upon a common and broad basis.

The paper of Dr. Preston Scott, on "The Use of Chloroform During Labor," advocated a much more general use of the drug than is common. In the discussion which followed, the proposition was strongly indorsed. Some of those who discussed the paper thought fatty heart an absolute contra indication, others did not. Some thought the use of morphia with the chloroform very desirable.

Dr. George J. Cook read a paper on "Chronic Constipation," in which he classed all such cases as atonic, or obstructive. He considers disregard of natural laws the chief cause of the atonic variety, and large injections of hot water and massage along the colon the best treatment for it.

The most frequent causes of the obstructive variety, he thinks, are irritability of the sphincter ani muscle, and contraction at the upper end of the rectum.

Those taking part in the discussion of this paper were uniformly of the opinion that dilatation of the sphincter ani is the proper treatment for the obstructive variety of the disease. The degree to which dilatation of the sphincter should be carried was not generally stated by those discussing the subject.

Dr. L. S. McMurtry presented a specimen from a case of pyosalpinx, with removal four days after confinement. The temperature had been 105° F., and at the time of the operation was 103.5° F. The patient made a good recovery. The author of the paper thought the case of special interest for the reasons: 1. The history of the case indicated that the pyosalpinx was caused by a gonorrhœa, and was of long standing. 2. That the case demonstrates that conception may occur with unilateral pyosalpinx present.

Dr. A. C. Bernays presented two pathological specimens, one, the pyloric end of the stomach and part of the contiguous duodenum, removed because it was carcinomatous. In the operation of removal the ductus communis choledocus and the pancreatic duct "were torn off," but "were carefully stitched into the line of union on the posterior surface." The patient died eighteen hours after the operation. The autopsy showed "that there had been no hæmorrhage, the stomach held water, and bile discharged into the bowel."

The second specimen was a fœtus with a tail-like projection, and homologous arches, such as are found in fishes. The case was reported because of its bearing upon the theory of evolution.

Dr. Y. H. Bond read a paper upon the general subject of removal of the ovaries, asserting that the operation is too often unnecessarily done.

D. J. B. Green read a paper on "Gonorrhœal Peritonitis," in which he claimed that the infection does travel as far as the peritoneum. He reported three such cases in which abdominal section was beneficially made. The discussion of these papers developed a variety of opinions.

Dr. G. W. McCaskey read a paper in which he described and advocated an apparatus of his own construction for intra-pulmonary medication by means of vapors at high temperatures.

Several other papers were also read and discussed.

The association adopted a revised constitution, and elected the following officers for the year 1887: Dudley S. Reynolds, President; A. Dunlap, Y. H. Bond, A. R. Jenkins, H. C. Fairbrother, D. H. Thompson, Vice-Presidents; J. Lucius Gray, Permanent Secretary; A. H. Ohmann-Dumesnil, Treasurer.

The society adjourned to meet in St. Louis in September, 1888.

SURGICAL SOCIETY OF BOURNEVILLE.

(From "*Le Progres Medical*," No. 22.) Translated by Professor Frank Billings.

PROFFESSOR SEE reported the following case: A young man, coming from Salonica to France, was troubled with obstinate constipation during the voyage. On his arrival in France, he underwent various kinds of treatment usual in such cases. Nothing relieved him. He was sent to the "Maison de Santé," where electricty was tried without success. The abdomen was enormously distended and painful, but there was no vomiting, no fever. Water was injected into the intestine in great quantities, to forcibly dilate it, and at the end of four days the patient was cured. (Stools abundant). This case is curious, because the constipation lasted forty-two days. The respiratory troubles, caused by flatulency, were such that it was necessary to tap the intestine, at different times, with a slender trocar in order to allow the gas to escape. Each capillary tapping gave temporary relief, at once.

ACADEMIE DE MEDICINE, BOURNEVILLE.

(From "*Le Progres Medical*," No. 21.) Translated by Professor Frank Billings.

PROFESSOR HAYEM read a communication upon the treatment of dyspepsia of infants. He wrote particulary of green diarrhœa and its microbic nature. He finds hydrochloric and lactic acids equally efficacious and salutary. Having observed that when one child was affected with diarrhœa, others in the same crib were quickly affected, he suspected the green stool to be cause. He therefore instituted prophylactic measures; removing soiled linen at once and washing it in a one per centum solution of corrosive sublimate. Since this prophylaxis was instituted green diarrhœa has ceased to exist in the children's wards of the hospital St. Antoine. Professor Hayem and his interne, M. Lesage, have proven the cause of the green color in the stools to be a special bacillus, and that it exists in the intestine. Professor Hayem finds lactic acid the best medicament to neutralize the effects of liquids infected with this bacillus.

CONCERNING PARALYTIC PHENOMENA IN SIMPLE PSYCHOSIS, ESPECIALLY MELANCHOLIA.

Report of a Clinic by Prof. Benswanger, of Jena, by Theodore Tichen. *Berliner Klinische Wochenschrift*, June 27, 1887.

THE writer refers to the fact that in a case of melancholia, or mania, physicians are accustomed to look for paralytic phenomena in the patient, and, if these occur, give an unfavorable prognosis, regarding the case as one of progressive paralysis.

But Seifert, in 1853, described cases "which in part, at least, belonged to pure mania and melancholia, with disturbance of the innervation of the iris. In two cases of simple mania there occurred a dilatation of the pupil on one side, which followed in its intensity all the variations of the psychic condition and disappeared for the first time on the occurrence of full recovery."

"Bailarger also emphasized the fact that *mania ambiticuse* with slight motor disturbances did not always lead to paralytic imbecility."

"Nasse confirmed Seifert's observations, and maintained that asymmetrical innervation of the facial nerve, hypoglossal nerve and the pupil, constant, as well as transitory, might not be of serious importance, and occurred in functional psychosis also, and, indeed, more frequently in such cases than in sane persons."

"Since then Tiggs alone has described similar paralytic phenomena, especially one-sided paresis of the face in simple melancholia, mania and dementia."

Later writers ignore the subject.

"I have observed in three cases of functional psychoses which were conditioned upon neither organic disease of the nervous system, nor upon hysteria, nor traumatism, etc., but occurred simply as phenomena attendant upon severe melancholia."

"In two cases the trouble was a stupor of exhaustion (*erschöpfungs-stupor*) and a melancholia which were associated with a moderate, but distinct, one-sided facial paresis, during rest as well as during active and mimetic motion."

"After perfect recovery there was perhaps still a slight difference between the two sides of the face while at rest, active innervation was perfectly symmetrical. The greater width of the fissure of the eye of the paretic side in this case had pointed to the participation of the eye facial. Asymmetry of the skull did not exist. Other disturbances of innervation were not noticeable."

"The third case, on account of its marked peculiarities, may be be given at length in the details of importance to the question."

"Kt., owner of a brick kiln, born in 1848, heavily burdened by inheritance, badly pulled down by the campaign of 1870–1, a sufferer from neither syphilis nor alcoholism. In the year 1875 he had, after a great fright, a severe attack of melancholia. He recovered after treatment in an asylum. He remained well for eleven years, when he had a slight attack of indigestion.

"In October, 1886, after the death of a child, he became ill again mentally, and, on account of severe depression, in which he attempted suicide, he was brought into this institution. Here, mentally, he was the picture of severe melancholia without the slightest intellectual defect; bodily, signs of premature senility, increase of the tendon and skin reflexes, in other respects almost no disturbance. In the progress of the mental affection there appeared paresis of the mouth facial (at rest as well as during active innervation), at one time on the right, at another on the left; its intensity corresponded in all respects with the degree of the melancholia. Meanwhile, after the institution of opium treatment (0.12 extr. opii. twice a day) severe retention of urine was added to the symptoms. With the cessation of the opium treatment, the bladder symptoms disappeared. But there occurred a constant dilatation of the right pupil, (with prompt

reaction) and, in addition, complaints of tension and weight in the limbs.

"After about a month the psychic condition improved, the difference in the pupils was smaller, and the changing difference in the face no longer occurred.

"A relapse occurring, caused by the accidental visit of a friend, the difference between the pupils showed itself again quite plainly.

"About two and a half months after his reception he was dismissed; the difference between the pupils was then no longer to be noticed, and motility, sensibility and intellect were intact."

"Cases like the two first mentioned are certainly more frequent than one would think. I might conjecture that here the functional disease brings forward only more prominently an already existing congenital deficiency in innervation. Hysterical symptoms also appear not seldom to be located by preference in such deficiently innervated nerve territories, or occur with greater intensity."

"In the third case which I may regard as melancholia, it is certainly possible to make the premature senility, next to the severe melancholia, answerable for the unusual paretic phenomena, without being willing to contend that it is self-evident that such a patient may have a special predisposition to a later progressive paralysis or senile dementia. Among paralytics especially, also, the degree of the paralysis is by no means in that close relation to the intensity of, for example, the of depression. The chief stress is in every case to be laid upon the absence of intellectual defects; these are the first symptoms that establish the bad prognosis of anomalies of the passions and paralytic phenomena. At the same time a case like the above forms a transition from simple melancholia to curable *folie paralitique*; from the latter it is separated by the lack of the paralytic disturbance of speech."

"In connection with these cases attention may be drawn to still another paralytic phenomenon in functional psychoses, especially melancholia and the stupor of exhaustion; this is a slight insufficiency of the internal recti muscles of the eye, for the most part on both sides, occasionally with the consequence of slight muscular asthenopia. It betrays itself by the loss of the accurate direction of both eyes toward the finger which has been held up when one eye is covered by the hand, the covered eye deviates slightly outwards. That the case behaves here purely as a phenomena attendant upon the psychosis is shown by this, that the insufficiency does not exist long before the psychosis and disappears upon recovery."

"Finally I may be allowed to give space to the following single observation concerning the innervation of the pupil, although, of course, here, as in Seifert's cases, it occurs more often as a result of irritation of the sympathetic than as a paralytic phenomenon."

"Brissand and Marie have of late repeatedly described cases in which the hypoglossal and facial nerves were involved in a hysterical hemiplegia. In their clinic there was a case of hysterical paranoia in which the left half of the body, also including the mouth facial was paretic. The tongue did not deviate, but there existed a *dilatation of the left pupil whose intensity went hand in hand with the hemiplegia.* The reactions of the pupil were well retained."

"In another case, of severe idea of constraint in a man sixty years of age, there existed a difference in the pupils for a few days, and occasionally also for a few weeks, in favor of the right eye, then it was transferred and the left pupil was again plainly wider. Now and then there was equality of the pupils. This variation has now been observed many times. Attacks of one-sided migrane (whose co-existence with melancholia, for example, is not rare) does not exist."

"Theoretically, the above paralytic phenomena arrange themselves as phenomena attendant upon simple psychoses (Freusberg). The foundation of such paralyses are congenital deficiency of innervation, fatigue and disturbance of the circulation of the cortical and sub-cortical centers (indirect influence of the sympathetic, here belongs case Kl.)."

"Practically the cases which have been cited seem to me to make it proper

to be careful concerning the diagnostic realization of paralytic phenomena *when intellectual defects are wanting*. The latter is the first thing which can demonstrate positively organic disease of the brain. On the other hand, we know today that a typical progressive paralysis may develop from an inorganic psychosis, as, for example, hysteria. But those paralytic phenomena in the transient psychoses always possess value as warning symptoms."

LESTER CURTIS.

ON THE CAUSES OF SUBCUTANEOUS INFLAMMATION AND SUPPURATION.

BY P. GRAWITZ AND W. DE BARY, (VIRCH. ARCH. FUR PATHOLOG. ANATOMIE IN PHYSIOLOGY U. FUR KLINISCHE MEDICIN. B'D. CVIII, 1887.)

[From a Review in the *Centralblatt fur Bacteriologie und Parasitenkunde, I., B'd.* No. 1, 1887, (Beumen, of Greifawald). Translated by Professor Frank S. Johnson.]

GRAWITZ, in the *Charité Annalen*, XI., 1886, under the title "Statestischer und Experimentell Pathologischer Beitrag zur Kenntniss der Peritonitis," stated his views upon the causal conditions of purulent inflammation of the peritoneum. He then expressed the opinion that the various bacteria of pus were not sufficient in themselves to cause purulent peritonitis, but that besides these specific causes of disease other forces inherent in the tissues must be brought into activity.

In the work at hand the same question is pursued in its relation to the subcutaneous tissues. Further investigations are contemplated to inquire into the causes of pleuritis. Grawitz and Bary consider the subject under four heads:

A. What is the effect of the absorption of unirritating fluids from the subcutaneous tissues.

The opinion held at the present time that the entrance of bacteria into the subcutaneous tissues, as the only exciting cause of suppuration, is not deserving of unqualified acceptance. It seems essential that the bacteria should form colonies and multiply in the tissues or upon wound surfaces before they are absorbed. When immediate absorption occurs they are harmlessly eliminated from the body.

B. What is the effect of irritating watery solutions?

(1). Concentrated salt and sugar solutions, either sterilized or containing staphylococcus aureus, injected into the tissues caused œdematous swelling, but no suppuration in dogs or rabbits. The addition of even considerable quantities of staphylococci was without effect. Suppuration resulted only when there was necrosis of the skin.

(2). The effect of acrid substances in watery solution.

I. *Group.* — Germ-destroying substances. Corrosive sublimate, 1 per cent.; nitrate of silver, 1 per cent.; absolute alcohol, chloride of zinc, 1 per cent.

(*a*). Corrosive sublimate in dogs and rabbits underwent simple absorption,— in most instances it was accompanied by transitory swelling, but there was no suppuration.

(*b*). Experiments were conducted with nitrate of silver, both in sterilized solutions, and in solutions containing pus-microbes. The addition of the latter was without influence, inasmuch as the germ-potency of the microbes was destroyed by the solution (5 per cent., and much weaker). Very weak solutions (0.5 per cent.) were simply absorbed. Stronger solutions (5 per cent.) produced abscesses in dogs. The pus collected under aseptic conditions was free from germs.

It seems evident that suppuration is a reaction of animal tissues, which may be induced by a chemical substance without the influence of bacteria—a substance which may in fact destroy germs—pro-

vided the reagent is of the requisite strength, and is introduced into the tissues in sufficient quantity.

(*c*). The injection of absolute alcohol containing pus-microbes, or followed immediately by the injection of water holding the microbes in suspension, did not cause suppuration.

(*d*). Chloride of zinc in 1 to 5 per cent. solution gave the same results.

II. *Group.*—Soluble acrid substances, not germ-destroying. Acids, potassium and sodium hydrate and ammonia.

(*a*). The injection of acids, either in strong or weak mixture, did not produce suppuration. The addition of staphylococci (aureus, citreus, albus) did not alter the result.

(*b*). The hydrates of potassium and sodium gave similar results. The lye swelled the tissues and destroyed them. It did not produce favorable conditions for the growth of microbes within the body.

(*c*). Ammonia solution - sterilized. When introduced in small quantities and in weak solution it was absorbed without producing inflammation. Larger quantities (4-6 c. cm.), and stronger solutions caused abscesses in dogs. Cultures of this pus upon agar agar remained sterile. Repetition of this experiment, with the addition of pus-microbes, gave the same result, except that in the latter colonies of micrococci appeared on the agar agar. "These experiments show conclusively that ammonia of sufficient strength causes violent inflammation and suppuration. It provides suitable conditions in the subcutaneous tissues for the development of the microbes of pus. In very weak solution it does not injure the tissues.

C. How does the absorption of irritating oily substances act?

(*a*). *Turpentine.*—Preliminary experiments showed that turpentine was an active germicide. Its effect upon the subcutaneous tissues varied in different animal species. Its introduction in rabbits and guinea pigs, with or without the addition of pus-microbes, was followed by inflammation, but no suppuration. In dogs, on the contrary, it proved to be an active pus-producing agent.

(*b*). *Croton Oil* is not a germicide. Experiments showed that it was capable of exciting inflammation. In small quantities it caused in rabbits a watery or fibrinous exudation into the tissues. In larger quantities it corrodes; has a toxic effect, and, under certain conditions, may cause suppuration. When pus-microbes are added, suppuration always follows.

D. How does the injection of pus-microbes act?

Pus-microbes, in themselves, are not capable of inducing suppuration in healthy tissues—dogs and rabbits.

Various chemical substances can, without the aid of bacteria, induce suppuration under favorable conditions. When used in proper quantity, and in proper concentration, and upon animals whose tissues will react, suppuration invariably follows. Certain chemical substances in proper strength fit the tissues for the growth of pus-microbes.

Grawitz and Bary conclude that the same importance is attached to the ptomaines of pus-microbes as has recently been demonstrated for those of numerous other bacteria. The ptomaines of pus-microbes, acting as chemical irritants, prepare a soil in the subcutaneous tissue upon which the microbes may grow. Their effect is very readily seen upon the introduction of sterilized cultures, in which the fungus-poison is the only active agent. Sterilized cultures of the yellow pus-microbe induced suppuration in dogs. The pus contained no germs. For the formation of ptomaines the presence of free oxygen is of the utmost importance.

ABSTRACT OF A CLINICAL LECTURE ON THE ABUSE OF MINERAL WATERS.

BY PROFESSOR GERMAIN SEE, AT HOTEL DIEU, PARIS.

[From the *Journal de Médecine et de Chirurgie Practiques.* Translated by Professor Frank Billings].

WATERS naturally gaseous, acidulated or charged with carbonic acid, contain the latter in a proportion from 50 to 200 and 300 volumes of gas in a litre of water; when the salts contained in the waters are inferior to 1 per 1000, whether iron, calcium or bicarbonate of sodium, they merit only the name gaseous or acidulated, and have no virtue but that of carbonic acid gas.

This gas induces in the stomach an excitement of the mucous membrane and gastric nerves, producing an immediate sense of exhilaration and a certain stimulation of appetite, which oftentimes proves detrimental to the patient. Taken in large amounts and used continually, all of these waters introduce a new quantity of gas into the stomach, which mixes with that which already exists in the form of atmospheric air in the stomach, and gas of decomposition, especially carbonic acid, in the intestine; this gas materially aids in causing a sluggishness of the stomach, an atony with or without painful spasms. When these waters have a sodium base, they present the great advantage of stimulating the secretory function; but of what avail is a water feebly mineral and strongly carbonic, especially an artificial carbonic water, unless to augment the tympanism? The moving action of the gas upon the stomach or intestine cannot be estimated; for, taken in large quantities, it hinders rather than facilitates the peristalsis. The most incontestable effect of gaseous mineral waters is their action in augmenting the urinary secretion. The reason for this diuretic action is that under the influence of active gas it establishes a gastric mucous hyperæmia which accelerates the resorption of the mineral water. This is without doubt why alcoholic and gaseous drinks, like champagne, are more intoxicating than those which are not gaseous. These diuretics are generally pernicious, for they excite the renal secretion more than the vesical excretion; now renal irritation has no advantage; waters have power, for example in gravel, by carrying away the sand from the tubes of the kidneys, but, at the same time, excessive secretion is to be feared, because it may produce artificial lesions. If the kidneys are injured in any way, the use of water is dangerous. In all cases of nephritis, interstitial or parenchymatous; in the albuminuries, from all causes, mineral waters are not alone contra-indicated, but are disastrous. Professor Sée gave two examples in which the use of diuretics in an albuminous, gouty nephritis, resulted in death. It is necessary then to avoid the ill use of gaseous waters, which are generally more agreeable than efficacious.

Among mineral waters presenting the most incontestable advantages, the alkaline sodium waters must be placed, *and appear to be effective in most cases of dyspepsia.* Of these, Vichy waters rank first, chiefly by the simplicity of their composition; they dissolve at once in the stomach by the intervention of the gastric acids. But clinical experience demonstrates that if the amout of mineral water taken is very considerable, if taken during or after a meal, especially if it acts upon a weak or dilated stomach, far from facilitating digestion, a veritable putrid fermentation is produced; as when one tries to digest an albuminous body with a neutral gastric substance.

Alongside of numerous indications, there are contra-indications, chiefly in flatulent gastralgia, in simple intestinal debilities or in hæmorrhoides; they are plainly injurious in muco-membranous enteritis as well as in intense and serious dilatations of the stomach.

It is then principally in dyspepsias,

called chronic, that Vichy water is indicated; but in all cases it should be taken half an hour or an hour before eating; thus preparing and provoking the gastric secretion; taken at meal time it loses all of its advantages.

For habitual drinking, Professor Sée considers tea the most digestive form; a light infusion, taking at least one-half litre and at a high temperature; for the noonday meal its advantages over wine are numerous; it does not ferment; it contains only traces of tannin, whilst coffee contains infinitely more, which coagulates the albumen. The aërated drinks, by the exciting impression they produce upon the stomachic mucous membrane, makes the aliments of the stomach rapidly disappear, and submits them also to the action of the intestino-pancreatic juice. Some patients can digest only by the aid of hot drinks.

An important remark relating to alimentary drinks is that distilled drinks, diluted in water, succeed often much better than wine. There are patients who cannot bear wine without complaining of acidity, or of sensations of hot iron, and who can take rum or brandy with water added, especially after combustion of these liquors.

As a light purgative for dyspeptics, Professor Sée habitually prescribes a preparation composed of equal parts of sublimed sulphur, cream of tartar and calcined magnesia; one spoonful in coffee once or twice a day; *i.e.*, two or three grammes of each of these laxative powders.

THE PUPIL IN ITS SEMEIOLOGICAL ASPECTS.

In a very interesting paper by Macewan, in the *American Journal of the Medical Sciences* for July, 1887, the following conclusions are presented:

(A) 1. When the function of the brain is in abeyance, the pupils are in a state of stabile mydriasis.

2. This may arise either from temporary suspension or from aboliton of function.

3. Temporal suspension is illustrated by shock, and the effect of some poisons; while the abolition of function is exemplified by extensive laceration and compression of the brain.

(B) 4. When the function of the brain is interfered with by conditions usually included under the term "irritation," the pupils are in a state of myosis; sometimes labile, but generally stabile myosis.

5. This "irritation" or interruption of function may be seen during certain degress of cerebral anæmia, produced experimentally, and not a pathological result; certain amounts of brain pressure, and certain stages of intracranial inflammation.

6. These are illustrated in persons who have suddenly lost a considerable quantity of blood (about a fifth of the whole); in the growth of intracranial tumors, and the formation of sanguinolent serous and purulent effusions, when the degree of pressure may be denominated as "medium," and at certain periods of meningitis and encephalitis.

(C) 7. The same pathological factors which cause myosis may also cause mydriasis, the degree in which these factors are present being the determining point between the former and the latter, and not *merely* the particular locus in the brain.

8. It is well illustrated by cases where the hemorrhage is repeated, and is finally pushed to syncope; in intracranial pressure, which is gradually increased until it becomes great, such as arises from tumors, blood-clots, and inflammatory products.

(D) 9. When the function of one-half of the cerebrum is placed in abeyance by a superficial or cortical lesion, the pupil on the same side as the lesion is in a stabile mydriasis.

10. This is well illustrated in cases of

intracranial sanguinolent effusion consequent on injury (see list of cases).

(E) 11. When the function of one-half of the cerebrum is interfered with by some source of cortical irritation, the pupil on the corresponding side to the lesion is in a state of myosis.

12. This is illustrated by traumatic and pathological lesions affecting the cortex of the cerebrum.

(F) 13. Hemorrhage into the pons Varolii when small, causes strongly contracted pupils; but when it is more extensive, involving the gray matter beneath the aqueduct of Sylvius, a state of stabile mydriasis is induced.

14. Effusions into the lateral ventricles when small, produce contraction of the pupils, but when the effusion is great stabile mydriasis ensues.

15. Inequality of the pupils indicates a unilateral lesion or lesions.

16. When the lesion is cortical and unilateral the pupillary manifestations are on the corresponding side. When the basal nerves are affected unilaterally the pupillary effect is manifested on the same side as the lesion. When the lesion is unilateral and affects the function of the white fibres of the cerebrum, the opposite pupil is generally affected. When the basal ganglia are implicated unilaterally the pupil is sometimes affected on the same side as the lesion, occasionally on the other side.

In a case of cholesteatoma and in another of glioma of the right optic thalamus, dilatation of the left pupil was found (*Ross*, vol. ii., p. 572).

In lesions of the cerebral peduncles the pupil is affected on the same side as the lesion.

Lesions in the corpora quadrigemina affect both pupils, irritation* causing contraction, destruction causing dilatation and immobility.

Section or destruction of one optic tract causes dilatation of the opposite pupil and blindness of the opposite eye.

17. Irritation of the cord, especially the cilio-spinal axis, produces dilatation of the pupils, while destruction of the cord causes contraction. These effects are generally seen in both pupils, though, experimentally at least, they may be confined to the same side as the lesion.

18. The pupils are affected in the same way by lesions of the sympathetic, though in unilateral lesions it is only the pupil on the same side as the lesion which is affected.

19. Speaking generally, when myosis is due to a cerebral cause, it indicates the earlier stages of various affections; when due to a spinal lesion it points to a most serious paralysis, often to the destruction of the part. When mydriasis arises from a cerebral lesion it is generally present in large amount; when due to a spinal affection it indicates irritation of the part.

MYOSIS OCCURS UNDER THE FOLLOWING CONDITIONS:

1. When a bright light acts upon the retina.
2. Accommodation for a near object.
3. Rotation of the eyeball inward.
4. Local irritation or painful affections of the eyeball.
5. Irritation of the oculomotor nerve.
6. Paralysis of sympathetic roots of lenticular ganglion or trunk of sympathetic in the neck. In paralysis of the fifth there is myosis and inflammation passing on to destruction of the eyeball.
7. Paralysis of the cilio-spinal region of spinal cord. All affections which destroy the cervical spinal marrow and intercept its conductibility produce congestion of the face and contraction of the pupils. In neurosis, which suspends or diminishes the tone of the sympathetic or spinal axis.
8. Encephalic congestion, such as: obstacle to return of blood in jugulars; venous congestion due to cardiac causes; active hyperæmia, plethora, fevers, pneumonia, hepatitis, etc.; when animal is suspended by the heels; in early stages of meningitis and encephalitis; in acute mania with marked activity of the cerebral circulation; in chronic mania pupils are variable, when contracted are said to

*Unilateral electrical stimulation causes dilatation of both pupils, the opposite one becoming first dilated. Ferrier explains this as the result of irritation of a sensory structure, in this case acting through the medium of the anterior roots of the second dorsal nerves which ascend in the cervical sympathetic.

indicate supervention of paralytic dementia.

9. During sleep; some believe this to be due to the congestion of the cerebral vessels and those of the iris (Mosso); others, to the inward rotation of the eyeball.

10. In early stages of cerebral tumor.

11. In small hemorrhages into the cerebellum. In irritation of the cerebellum, contraction of the pupil on same side as lesion ensues.

12. Electrical stimulation of the angular gyrus frequently causes contraction of the pupil.

13. During forced expiration, when the eye is at the same time passive. Also generally seen during the period of apnœa in Cheyne-Stokes respiration.

14. Convulsions arising from meningo-encephalitis are said to be accompanied by myosis, while in convulsions due to epilepsy and in epileptiform fits they are usually accompanied by mydriasis.

15. When the eye contracts on accommodation to a near object, yet does not contract to light, this indicates a lesion situated between the corpora quadrigemina and oculomotorius. This affection is known as the Argyle-Robertson symptom. It is seen in locomotor ataxia, and occurs in the progressive paralysis of the insane.

16. During uræmic coma.

17. Myotics: physostigmine, nicotine, pilocarpine, morphine, muscarine.

MYDRIASIS OCCURS UNDER THE FOLLOWING CONDITIONS:

1. In darkness or in subdued light.

2. Accommodation for distant objects.

3. Rotation of the eyeball outward.

4. In forced movements discharged from the medulla; vomiting, swallowing, chewing, forced respiration.

5. Paralysis of the oculomotor (accompanied or not by immobility of eyeball, external strabismus, diplopia, etc.).

6. Destruction of the optic nerve; amaurosis. When unilateral, associated movements continue.

7. Irritation of sympathetic; powerful impressions on sensory nerves; strong moral emotions, mental pain, grief, fear; neuralgia of the fifth nerve.

8. Irritation of the spinal cord, especially cilio-spinal region.

9. Encephalic anæmia: In all cases where there is reflex contraction of the vessels of the head; when loss of blood from the body is excessive; obstruction of the carotid arteries; in thrombosis of brain sinuses; dilatation of mesenteric vessels when extreme; syncope, intense cold, rigors; dyscrasias of the blood, convalescence, cachectic conditions; asphyxia, epilepsy, in certain stages of these affections.

10. Pressure of cerebrum, when great in amount, as from hemorrhage, neoplasms, etc. In the last stages of meningo-encephalitis.

11. In cerebral softening. In acute dementia (œdema of cortex cerebri) observers state that the pupils are invariably dilated (Hutchinson).

12. In idiots the pupils are generally dilated.

13. During deep inspiration, generally in respiratory period of Cheyne-Stokes breathing.

14. Hemorrhage into centrum ovale and into cerebral peduncles.

15. Ferrier produced dilatation of opposite pupil by destructive lesion of the optic tract in the thalamus, indicative of rupture of the centripetal fibres to the irido-motor nucleus in the floor of the Sylvian aqueduct.

16. In hydrophobia there is mydriasis.

17. Mydriatics: atropine, homatropine, duboisine, daturine, hyoscyamine. Curare injected subcutaneously in animals (five to ten centigrammes) induces in one or two hours complete paralysis of the third nerve.

THE EFFECT ON THE PUPIL OF LOCAL CONDITIONS OF THE EYEBALL:*

1. Hyperæmia of the iris produces contraction of the pupil which darkness scarcely diminishes.

2. Presbyopia and hypermetropia

*The writer is indebted to Dr. Thomas Reid for revising this list of pulpillary effect occasioned by local conditions of the eyeball.

cause contraction of the pupils in cases where continuous and excessive strain for near accommodation has been long continued, and has produced asthenopia.

3. Pupillary atresia, consequent upon chronic irritation with posterior synechia, producing contraction of the pupil.

4. In synechia total dilatation is impossible, the iris dilating only where free, hence the pupil is irregular. If the synechia is annular the pupil is both contracted and immobile.

5. In microria there is a congenital state of extreme contraction.

6. In glaucoma the pupil is dilated, contracting little or not all to the action of calabar bean.

7. In coloboma, both in the congenital form and after iridectomy, there are irregularity and immobility of the pupil.

8. In idiopathic mydriasis there is little contraction to the action of light or myotics.

9. In certain cases of amblyopia and amaurosis there is no dilatation of the pupil.

10. In hippus pupillæ there are alternate contraction and dilatation often accompanied by nystagmus.

11. Inequality of the pupils exists in some who have different degrees of refraction in the two eyes, one being emmetropic and the other myopic.—*Quarterly Compendium of Medical Science.*

THE FORMS OF ALBUMEN IN THE URINE, AND THEIR TESTS.

DR. T. GRAINGER STEWART, physician in Ordinary to the Queen for Scotland, in a lecture at the University of Edinburgh, gave the following account of the forms of albumen found in the urine, and the results of a careful and prolonged inquiry which, along with Dr. Stevens, he has made as to the comparative delicacy of the leading tests for serum albumen, and as to the value of the different methods of quantitative analysis by which the amount of albumen may be determined.

The forms of albumen met with in the urine are :—

I. *Serum Albumen*, a substance which, according to Hammarsten, constitutes 4.516 per cent. of the blood serum. It is almost constantly present in urine which contains any variety of albumen. Although a less diffusible body than serum globulin, it is capable of passing through membrane.

II. *Serum Globulin or Paraglobulin*, the globulin of the blood serum, of which it constitutes 3.103 per cent. It is met with in almost all albuminous urines, its proportion to the serum albumen varying in different instances.

III. *Peptone*, a product of gastric and pancreatic digestion of albuminous substances, also occuring in the process of transformation of tissues and of inflammatory effusions. It is a readily diffusible substance, occasionally met with in the urine in association with or apart from serum albumen.

IV. *Propeptone, or Parapeptone, or Hemialbumose*, a substance or group of substances intermediate between albumen and peptone, constituting a stage or stages of transformation from the one to the other. It is highly diffusible, and is occasionally met with in the urine under conditions corresponding to those under which peptone occurs. This is the peculiar form of albumen which was discovered in the urine by Dr. Bence Jones in a case of osteomalacia.

V. *Acid Albumen, or Syntonin*, one of the derived proteids obtained by the action of acids upon albumen. It is easily produced artificially by the addition of acid to albuminous urine, but may occur naturally in certain cases.

VI. *Alkali Albumen*, another derived proteid, produced by the action of alkalies upon albumen. It is readily produced

artificially, but is also found naturally in the urine.

VII. *Hæmoglobin*, the combination of hæmatin and globulin naturally existing in the red corpuscles of the blood. It sometimes appears in the urine, particularly in cases of hæmaturia and hæmoglobinuria, also in certain septic conditions, and after inhalation of arseniuretted hydrogen, transfusion of blood, and otherwise.

VIII. *Fibrin*, a proteid substance which does not normally exist as such in the blood. It is met with in the urine in hæmaturia, in some cases of chyluria, and in certain varieties of renal casts.

IX. *Mucin*, the chief constituent of mucus, is a derived proteid substance. It frequently becomes superadded to the urine after secretion, and may be derived from any part of the urinary tract.

X. *Lardacein, Waxy or Amyloid Material*, familiarly known as a pathological substance within the body, is said to be occasionally demonstrable in renal casts.

Of these ten varieties the last four are of little practical importance—mucin alone being indeed worthy of special comment, and that mainly because of the difficulties which its presence raises in regard to the reliability of certain tests for serum albumen.

As to the tests for the albumens, he puts in tabular form the chief tests for the different varieties of albumen, with their actions upon each variety.

TABLE I.—SHOWING TESTS FOR THE CHIEF FORMS OF ALBUMEN.

	Serum Albumen.	*Serum Globulin.*	*Peptones.*	*Propeptones.*	*Acid Albumen.*	*Alkali Albumen.*
Heat.						0
Heat with nitric acid. / Heat with acetic acid.	Opacity.	Opacity.	0	0	0	Opacity.
Cold, nitric acid.	Opacity.	Opacity.	0	Opacity dissolved by heat.	Opacity.	Opacity.
Metaphosphoric acid.	Opacity.	Opacity.	Opacity diminished or dissolved by heat.	Opacity diminished or dissolved by heat.	0	Opacity.
Acidulated brine.	Opacity.	Opacity.	Opacity diminished or dissolved by heat.	Opacity diminished or dissolved by heat.	Opacity.	Opacity.
Picric acid.	Opacity.	Opacity.	Opacity dissolved by heat.	Opacity dissolved by heat.	Opacity.	Opacity.
Potassio-mercuric-iodide.	Opacity.	Opacity.	Opacity dissolved by heat.	Opacity dissolved by heat.	Opacity.	Opacity.
Potassium ferrocyanide.	Opacity.	Opacity.	0	Opacity dissolved by heat.	Opacity.	Opacity.
Dilution with water.	0	Slight opacity.	0	0	0	0
Magnesium sulphate.	0	Opacity.	0	0	Opacity.	Opacity.
Fehling's solution.	Brownish-red or mauve.	--	Rose pink or purple.	Rose pink or purple.		
Randolph's test.	--	--	Yellow opacity.	Yellow opacity.		

The oldest test for albumen depends upon *its coagulability by heat.* Heat coagulates the serum albumen (opalescence occuring at 60° C., coagulation at 72° to 75°), and also the serum globlin (opalescence occurring at 68° C., coagulation at 75°); has no effect upon the peptones, propeptones, nor upon acid alkali albumen, unless an alkali or acid or has first been added. It, however, produces cloudiness with phosphates, by driving off carbonic acid, which holds them in solution, and the further addition of nitric acid, by redissolving them, clears up the opacity. A preliminary acidulation with acetic or nitric acid prevents this cloudiness, but may convert albumen into acid albumen, and so make the test fail. But on the whole, if cautiously employed, heat will be found a good test. A further security may be obtained by using both acetic acid and a concentrated solution of magnesium sulphate, or of sodic sulphate, or of common salt, for these prevent the undue action of the acid upon the albumen.

The *Cold Nitric Acid Test* ranks next in date of introduction and in general popularity to that by heat. When a layer of nitric acid is brought into contact with a layer of urine, a white coagulum is formed at the line of junction of the fluids. The acid coagulates serum albumen, serum globulin, has no effect upon peptones; gives an opacity with propeptones, which, however, disappears with heat; has no effect upon acid albumen, but gives distinct reaction with alkali albumen. One or two sources of fallacy must be kept in view when one employs this test. It may give a precipitate with urates, with urea, or with resinous substances. Such fallacies may be avoided by the adoption of very simple precautions, which are fully detailed in the books on urinary analysis.

Metaphosphoric Acid is an excellent test for albumen, but a sit is only serviceable when pure, and diffcult to keep in that condition, it has not come into general use.

Acidulated Brine is also a test of considerable value, acting upon all varieties of albumen, but it is not likely to become greatly trusted, because of its frequently giving some reactions with normal vrine.

Picric Acid is a test which has been brought into use in Great Britain mainly by the recommendation of Dr. George Johnson. It produces an opacity with all the forms of albumen; but while those with serum albumen, serum globulin, acid and alkali albumen persist or become more distinct with heat, those with peptone or propeptone dissolve. It must be remembered, also, that alkaloids, such as quinine, give a cloud with this reagent, but one which rapidly disappears with heating. On the whole, I believe this to be the most reliable and delicate test which we at present possess.

It has been objected to the test, that it precipitates mucin as well as serum albumen, and that this is a source of fallacy, particularly when it is used by the contact method. Careful investigations by Prof. Stewart showed that, while a large number of the specimens gave distinct reactions both with picric and citric acids, there were three which gave an opalescence with picric and not with citric, and seven of those which reacted with citric acid gave no reaction with picric. From these facts he concludes that mucin may be demonstrated by citric acid when no reaction is produced with picric, and that picric may show minute quantities of albumen in urines in which citric acid fails to show mucin.

On the other hand, picric acid often produces an opalescence in urine apparently free from albumen, and Dr. Stevens made a series of careful experiments which seem to indicate that picric acid acts upon mucin, although more slowly and less distinctly than does citric acid. The degree of acidity of the urine is probably an important element in relation to this reaction with picric acid; and Prof. Stewart thinks that where acid is present in quantity the opalescence is distinct; where it is in slight amount, it is comparatively or completely absent.

It is likely that although picric acid

often affects mucin, it does not do so in such a way as to render it unreliable as a delicate test for albumen. Its precipitate with mucin is, even when applied by the contact method, a slight, slowly developed haze. A precipitate indicating albumen is more marked and more quickly produced. A little practice in the use of the test will soon render any one familiar with the degree and rate of formation of the opacity which indicates albumen as distinguished from those which mark the presence of mucin.

Potassio-Mercuric-Iodide, which was first proposed as a test by M. Tanret, corresponds in its action to picric acid, giving opacity with serum albumen, globulin, acid and alkali albumen, and an opacity dissolved by heat with peptone and propeptone. But it will be found to give a reaction with a very large proportion of normal urines, and as the addition of an organic acid—citric or acetic—is required to bring out the reaction, it is clear that mucin must, in many cases, give a degree of opalescence. It may be that other sources of fallacy exist in regard to slighter reactions. Dr. Oliver's method of applying this test greatly reduces the chances of error, but its disadvantages render it an inferior test to the picric acid.

Potassium Ferrocyanide, first suggested by Dr. Pavy, also resembles picric acid in its action, except it does not give any indication with peptones. The objections which induced Prof. Stewart to reject the reagent last described apply to this one also.

Dilution with water is a convenient but not very reliable test of the presence of serum globulin, as it produces a milkiness, that substance being soluble in weak saline solutions, but not in pure water or extremely diluted solutions of salts. It produces no effect upon other forms of albumen.

Magnesium Sulphate is a valuable test for serum globulin, as it produces a milky opacity with that substance, which speedily deposits as a precipitate. It has no action upon serum albumen, peptone or propeptone, but produces an opacity with acid and alkali albumen. It is best used in saturated solution by the contact method. By its use also, according to methods described in works dealing with the subject of physiological chemistry, the globulin may be separated nearly pure, and its amount determined.

Fehling's Solution, or other alkaline solution of copper, is a most convenient test for peptone and propeptone, giving with these a rose pink or purple color at the point of contact of the test with the supernatant urine, and producing no effect upon the others, with the exception of serum albumen, with which it gives a brownish-red hue.

Randolph's Test for peptone and propetone, which consists in the addition of one drop of saturated solution of iodide of potassium and then of two drops of Millon's reagent (an acid solution of nitrate of mercury) to a drachm of urine gives a yellow, instead of a red, precipitate when these substances are present; but, as Randolph has pointed out, it gives the same color reaction with bile salts, which are frequently present in considerable amount in the urine. Therefore we cannot esteem it so highly as the copper and alkali test.

The presence of hæmoglobin may be made out by the guaiac reaction or by the spectroscope; the presence of fibrin may be ascertained by its decomposing with effervescence hydrogen peroxide; mucin may be discovered by means of citric or acetic acid; and waxy material may be shown (if it is ever present) by iodine, and sulphuric acid, or by methyl-aniline violet.

Table II. I show you the results of tests as to the relative delicacy of the principal tests for albumen. The first column shows the dilution up to which the action of each reagent remained distinct; The second shows the percentage of albumen, as calculated from the total quantity in the undiluted fluid and the number of dilutions; and the third shows the grains, or parts of a grain, per ounce as calculated from the same data:

TABLE II.—*Showing the Comparative Delicacy of Tests for Serum Albumen.*

Tests.	Dilutions.	Percentage.	Grains per Ounce.
Boiling	300	0.0005	0.00218
Acidulation with acetic acid, and boiling	500	0.0003	0.001311
Cold nitric acid	50	0.003	0.01311
Metaphosphoric acid	500	0.0003	0.001311
Picric acid	1000	0.00015	0.000655
Potassio mercuric iodide. (Test papers)	500	0.0003	0.001311
Ferrocyanide of potassium	500	0.0003	0.001311

The urine contained albumen to the amount of 1.5 grammes per litre, which is equal to 0.15 per cent., or 0.655 of a grain per ounce.

The results show that the *boiling test*, carefully applied, is an excellent one, revealing the presence of so little as 0.00218 of a grain per ounce, and continuing to show up to the 300th dilution of the standard specimen. But heat, with preliminary acidification with a little acetic acid, was still more delicate, showing 0.001311 of a grain per ounce, and giving a perceptible haziness up to 500 dilutions.

The *Cold Nitric Acid Test* falls far short of this in delicacy, for it does not give a distinct reaction beyond the 50th dilution, and therefore shows only with 0.01311 of a grain per ounce. It is true that if the specimen is allowed to stand, the reaction may gradually manifest itself, with m nute traces of albumen; but this is inconvenient, and for practical use tests are to be estimated in proportion to their rapidity of action.

Metaphosphoric Acid gave the same results as heating after acidulation with acetic acid, viz., showing till the 500th dilution of the standard urine, and 0.001311 of a grain per ounce.

Picric Acid proved the most delicate test, giving a faint but perceptible reaction up to the 1000th dilution of the standard specimen, which is equal to 0.00015 per cent., or 0.000655 of a grain per ounce.

The *Potassio-mercuric Iodide* and the *Ferrocyanide of Potassium Tests* gave the same results as metaphosphoric acid, showing albumen up to the 500th dilution of the standard specimen, equal to 0.0001311 of a grain per ounce.

From these and other observations Prof. Stewart concludes that picric acid is the most delicate of all the reagents which we possess for albumen, and that next to it rank the potassio-mercuric iodide, the heating after acidulation with acetic acid, the ferrocyanide of potassium, and the metaphosphoric acid. Boiling and adding nitric acid is less delicate, and still less so is the cold nitric acid test.

But delicacy is not the only quality required of a test. Indeed, a test may be too delicate for practical purposes. And again tests otherwise suitable may be practically inconvenient. Nitric acid is difficult to carry about, and picric acid presents a similar disadvantage, although in a minor degree. The test pellets devised by Dr. Pavy, of London, and the test papers of Dr. Oliver, of Harrogate, are extremely convenient, being easily carried about, and very delicate. But it may be held that they are too delicate, for few urines fail to show some reaction with them. Indeed, many of them show some reaction with practically normal urines. The smallest quantity of mucin may suffice to produce the reaction, or a quite infinitessimal trace of albumen proper. The tests must be used with discrimination, and too much importance must not be attached to their fainter indications. Albuminuria is rarely a serious condition unless it is sufficiently pronounced to be made out by the cold nitric acid test.

As to the quantitative analysis of albuminous urine, Prof. Stewart approves most highly of the coagulating, drying and weighing process. A less laborious process is that known as Esbach's Method. This plan requires certain special tubes, graduated so as to show the height to which the urine to be tested, and that to which the reagent (a solution of picric and citric acids) should reach, also the number or proportion of grammes per litre. The urine is filled up to the level indicated by the letter U, then the test fluid to the line marked R, and the fluids having been thoroughly mixed, are set aside to stand for twenty-four hours.

At the end of that time the level reached by the coagulum enables us to read ofl the grammes per litre. Our observations brought out a result, as is seen in the table, of 2.5 grammes per litre, which is equivalent to 0.25 per cent., or 1.0837 grains per ounce. It thus very closely corresponded to the results odtained by the first method.

Esbach's method brings out results closely corresponding to those obtained by the elaborate drying and weighing process. As the method is easily worked, as well as so reliable, it is a good one to adopt. Its only disadvantages are that one must wait twenty-four hours before the result can be obtained, and that it does not enable us to measure less than 0.5 grammes per litre.—*Quarterly Compendium of Medical Science.*

ANGINA PECTORIS WITHOUT LESION OF THE CORONARY ARTERIES.

M. BALL reports to the Société des Hôpitaux a case of thiskind. The patient was a man 34 years of age, who had previously had three attacks of rheumatism and one of intermittent fever. The attacks of angina began five weeks before death. There was slight aortic insufficiency, persistent and severe headache. The patient was a smoker. The autopsy showed the orifices of the coronary arteries permeable, and even dilated; insufficiency of the aortic opening; dilatation of the aorta, and hypertrophy of the left ventricle, whilst the right appeared diminished, and, as it were, crushed by the left. M. Ball explained the death by the imperfect action of the right ventricle. The quantity of blood emptied into the right side of the heart by the pulmonary veins being lessened, there was cardiac ischemia and a deficient circulation, not because of any narrowing of the coronary arteries, but despite of their dilatation. Commenting on the case, M. Huchard said he thought it one of tobacco angina, in which the patient died of arterial spasms as described by Cl. Bernard.—*Le Concours Médical, June 4, 1887.*

DYSPEPTIC ORIGIN OF VISUAL TROUBLES.

IN the opthalmological congress, M. Grandelement, of Lyons, said: "It is often observed that there are intermittent or remittent visual troubles which one can explain neither by the anomalies of refraction, nor by lesions of the media, or of the deep membranes of the eye. It is common in such cases to attribute these in a stupid way to the nerves. But if we scrutinize with attention the entire organism, we shall always find in such cases a defective condition of the digestive functions;—a dyspepsia, perhaps more or less chronic, and sometimes also a fault of nutrition (excess of phosphates, glycosuria, etc.). These functional affections of vision, this kind of neuropathic phenomenon, constitutes one of those numerous sympathetic neuroses caused by a faulty assimilation of the food, and the formation of toxic alkaloids or ptomaines, which result in the most various distant troubles. The visual defects observed most frequently consist in a diffused pain of the globe, radiating toward the temples, the forehead, and even to the scalp. There is hyperæs-

thesia of the retina, with photophobia and photopsia, more or less severe, following the limited exercise of accommodation. Other patients complain of scotomæ, hemianopsia, diplopia, and especially of *mouches volantes*. All of these ocular neuropathies may be cured, or their trouble, at least, greatly ameliorated, by careful attention to dietetics and hygiene, and by the employment of saline laxatives and alkalies, in moderate doses and for a long time. In the most severe cases, flushing the stomach, rest in bed, or the use of a hypogastric girdle to sustain the dilated stomach and intestines, will produce the best results."—*Le Concours Médical, May 28, 1887.*

RETENTION OF URINE.

DR. John Ashhurst, Jr., Professor of Clinical Surgery in the University of Pennsylvania, in a clinical, lecture, says:

I shall take this opportunity of making a few remarks on the subject of retention of urine. Retention must, in the first place, be distinguished from suppression. The latter is a much graver condition, and depends upon some fault in the kidney, either from organic disease or from sympathy with some other portion of the body. As a result the urine is not secreted, and the waste matters remaining in the blood soon give rise to symptoms of uræmia. In retention the urine is secreted but is not passed, and accumulates in the bladder. If there be free secreetd of urine, and only retention, the patient may live almost indefinitely, particularly when the retention is of a chronic character, such as we meet with in the case of old persons with enlargement of the prostate. In these cases, retention more or less complete may last for many months. Some years ago a patient presented himself at this hospital, with the statement that his urine was running away all the time. He had been under treatment for paralysis of the bladder. On examination, the bladder was found to be greatly distended, the vesical tumor reaching to the umbilicus. There was a certain amount of dribbling, but the bladder had remained full of urine for at least a year. The whole trouble was due to enlargement of the prostate.

Retention of urine may be due to several conditions. It may be the result of spasm. If a person is obliged to hold his water for an unusual length of time, it not unfrequently happens that when he attempts to empty the bladder he finds that he is unable to do so on account of spasm at the neck of the organ. Retention may also depend upon certain general conditions of the system: thus, in typhoid fever retention of urine is a common occurrence. There it is due to the fact that the nervous system, being under the influence of the poison of the disease, fails to recognize the necessity of emptying the bladder. The bladder, under these circumstances, may become much distended and great harm result.

Among the conditions that more commonly come under the observation of the surgeon is what has been termed spasmodic stricture, which is a condition very similar to the spasm at the neck of the bladder already referred to. A person becomes chilled from exposure to cold, and when he attempts to pass water finds that he is unable to do so on account of spasm. There is another condition which is termed congestive retention. Under such circumstances there is probably always some organic change, some stricture, which under ordinary circumstances gives no annoyance; but, as a result of some

cause, congestion takes place in the tissues around the stricture, and retention of urine ensues. This appears to have been the condition in the present case. The patient has had a stricture for many years; then, as a result of exposure, there was increased congestion, he was unable to pass his water, and it was found impossible to pass an instrument.

The most important causes of retention of urine are, however, true or organic stricture of the urethra and enlargement of the prostate. It is necessary to distinguish between these, as their treatment differs. Retention from stricture is a more dangerous condition than retention from enlarged prostate. If the patient be a young man, it is probable that the difficulty is not due to enlargement of the prostate, though there may be an acute prostatitis following gonorrhœa which may be accompained by retention. The ordinary form of prostatic hypertrophy is to be looked for in those past middle life. It rarely occurs before the age of fifty years, while stricture is more common between the ages of twenty and fifty years. The age of the patient may therefore enable the surgeon to form an idea as to the cause of the retention. If the retention be not complete or constant, some information may be obtained by observing how the patient passes water. In stricture, although the urine may be passed in a narrow stream, it is passed with a certain amount of force. The propulsive power of the bladder is not impaired, and the urine may be projected through the stricture even more powerfully than under normal circumstances, in accordance with the law of hydraulics that the force of a stream is increased in proportion to the diminution of the caliber of the tube through which it flows. If there be enlargement of the prostate, the urine will dribble from the end of the urethra instead of being passed in the ordinary parabolic curve. In this condition, the cause of the obstruction involves the propulsive power of the bladder.

The use of an instrument is, of course, the most satisfactory method of determining the cause of the retention. If the instrument be arrested in front of the prostatic portion of the urethra, the obstruction is due to stricture, but if it be stopped in the prostatic portion we know that there is enlargement of the the prostate gland. The distance at which the prostate is reached varies in different cases, but the average is six inches. If the obstruction be found at less than six inches from the meatus it is probably due to stricture, but if the distance be more than six inches the prostate gland is probably at fault. As I have already said, it is important to make the distincton between these two conditions, for not only does the treatment vary, but the urgency is also different. If the retention be due to enlargement of the prostate, you may temporize to a certain extent. There is not likely to be such acute distention as will cause rupture of the bladder, and the patient may with safety be allowed to go a certain length of time without active treatment. In stricture, however, the patient is in more imminent danger, and, unless relieved, rupture of the urethra may occur. Rupture of the bladder does not often result from retention due to stricture. If the bladder be distended, and the patient receive a blow over the pubes, rupture may occur, and the urine may escape into the peritoneum, exciting peritonitis, or it may be extravasated into the pelvic cellular tissue. If there be simply distention without violence, it is usually the urethra that gives way. The patient, after a violent straining effort, suddedly feels a sense of relief, the urine passes into the cellular tissue, and after a time gives rise to sloughing and gangrene, requiring free incisions to evacuate the effused fluid.

In retention from enlarged prostate it is usually possible to introduce an instrument without much difficulty, if a proper instrument be employed. The physician is apt to use the catheter found in the pocket-case, which, while

sufficiently long for ordinary use, is not long enough to reach the bladder in many cases of prostatic obstruction. I have been called some distance into the country to empty the bladder in a case of retention from enlarged prostate, where the whole difficulty was due to the fact that the instrument employed had been too short. Sometimes there is enlargement of the prostate without obstruction. This occurs when the third lobe is not involved. In almost all instances, if the catheter be sufficiently long and of the proper curve, the retention can be relieved. A good plan is to have one of these long English catheters kept constantly over-curved. The catheter must not only be long, but it must be more than ordinarily curved. In order always to have one in readiness, it is well to keep the stilette over-curved. When the wire is withdrawn, the instrument will retain sufficient curve to pass the obstruction. Another good plan is to mould the catheter to the desired curve by placing it in hot water, and then fixing it in this position by immersing it in cold water. It will then keep the curve sufficiently long to permit the obstruction to be passed. There are special catheters made for these cases of enlarged prostate. Some are made with a large curve, while others have a short angular beak, as in the Mercier's or elbowed catheter. This instrument is straight for nearly its whole lengths, and then has an acute bend. This is sometimes useful, as the sudden rise of the beak enables it to slip over the obstruction.

If you are unable to introduce an instrument in a case of enlarged prostate, it becomes necessary to resort to some operative procedure. Tunneling the prostate has been recommended. This consists in taking a solid instrument, directing it in what is considered the proper direction, and then forcing it through the prostate gland. This is a dangerous procedure, and apt to be followed by hæmorrhage. If you have to resort to any operation, the best plain is to tap the bladder. If the prostate be not large this can be done through the rectum, but if the prostate be much increased in size it is safer to tap above the pubis. This may be done very conveniently with the aspirator, but this has the disadvantage that the operation will probably have to be repeated as often as the bladder refills. It sometimes happen, however, that within a few hours after a patient has been relieved he is able to pass his water in the natural way. This also occurs after the use of the catheter, and the patient may go a considerable time without again requiring its aid.

Where the obstruction is due to stricture, and it is found impossible to pass an instrument, the urethra may be opened behind the point of obstruction. In this case I tapped the urethra at the apex of the prostate gland. Stricture, as you know, never involves the prostatic portion of the urethra, but is usually seated at the junction of the bulbous and membranous portions. If, therefore, an opening is made in the urethra at the apex of the prostate gland, you are certain to get behind the stricture. Such an operation is of course not adapted to retention due to enlargement of the prostate, although even there it may be employed to facilitate the introduction of a catheter. In performing the operation, an incision about three-quarters of an inch in length is made in the median line of the perineum, beginning half an inch in front of the anus. The forefinger of the left hand is introduced into the rectum and placed at the apex of the prostate, which can be readily recognized. The knife is then inserted into the incision, with its back towards the anus, and, guided by the finger in the rectum, is pushed onward until its point reaches the apex of the prostate gland. Having reached that point, you cut forward. This opens the urethra, which is at once known by the gush of urine. The knife is then withdrawn and a grooved director passed into the bladder, when, if the opening is not found to be suf-

ficient, it may be cautiously enlarged. An elastic catheter is next introduced upon the director and secured.

The operation was performed in this case five days ago. We shall now remove the tube for the first time, and insert a clean catheter. The urine is beginning to escape by the side of the tube, and in a few days we shall dispense with it entirely. In the course of another week the urethra may be in such a condition as to permit the passage of an instrument, although when the operation was performed this was impossible. If a sound can be passed, we shall be able to cure the stricture by simple dilatation. If we are still unable to pass the stricture, I shall submit to the patient whether he desires an operation for the cure of the stricture, or whether he is satisfied to pass his water through the perineum. Many patients prefer the latter alternative, which is attended with no particular inconvenience. The sphincter power of the bladder is of course preserved, so that there is no incontinence. The only inconvenience is that in urinating the individual must assume a sitting posture. I have had patients who have submitted to an operation for the relief of the stricture, but, finding a tendency to recontraction requiring the constant introduction of instruments, have preferred to abandon the urethra and pass water through the perineum.

The operation which I have described is adapted to cases of retention of urine due to stricture, and not to those due to any other condition. When the retention is due to enlarged prostate, and a catheter cannot be passed, the bladder must be opened either behind the prostate or above the pubis. For the simpler forms of retention from spasm, it is usually sufficient to put the patient in a warm bath and give an anodyne. If this is not successful, a remedy which was formerly much employed may be tried. This is the tincture of the chloride of iron. This has the effect of relieving spasm, and has been found to be very successful. Where you can do it, however, it is always better to relieve the retention at once by the use of the catheter, a soft instrument being preferred. It is not desirable to have the retention last even a few hours, for there is always a certain amount of damage done to the ureters and kidneys even in this short period.—*Quarterly Compendium of Medical Science.*

THE TREATMENT OF INTRA-PERITONEAL INJURIES.

THIS subject is of especial interest, because of the serious nature and disastrous consequences of wounds of the abdominal walls and viscera, and also on account of the immense progress which has recently been made in the surgical treatment of these injuries. No department of surgery has derived more advantage from that systematic cleanliness which is the basis of our modern system of antiseptics. The old belief in the necessarily fatal character of such injuries, and in the utter futility of operative interference, has given place to a well-grounded hopefulness and a spirit of surgical enterprise, scientifically bold without being rash, which have been the means of saving many a life that would formerly have been condemned.

The expectant treatment which our predecessors adopted, for want of better methods, is no longer considered justifiable, and no surgeon worthy of the name would now allow a case of supposed visceral injury to develop unequivocal symptoms of traumatic peritonitis without doing his best beforehand to ascertain and remedy the injuries which may have been inflicted.

To one who, like Sir William Mac Cormac, has had great experience on the battle-field, such a subject must naturally be congenial. One-tenth of the fatal cases on the field are due to some form of abdominal injury. Although the hurry and excitement of war do not offer a favorable opportunity for successful surgical intervention, still the frequent occurrence of wounds of this kind, and their extremely fatal nature, cannot but excite the interest and attention of those whose lot it is to witness them. The oration delivered by Sir William MacCormac at the annual *conversazione* of the Medical Society on the subject of abdominal section for the treatment of intra-peritoneal injury, gave him an opportunity of reviewing the progress which has been made, and of summing up the knowledge that has been gained, on this important subject. Most surgeons will probably agree with the orator when he expresses the indebtedness of abdominal surgery to Listerism, and the vast improvement both in methods and results which followed its introduction. Thanks to the confidence which experience of its efficacy has engendered, surgeons are now enabled to deal with these cases with a success that would have seemed incredible to surgeons of pre-Listerian times.

Formerly the practice was to suture the abdominal wound, and hope for the best. If the intestines were wounded, death ensued in a large majority of cases. Now, however, if reasonable grounds exist for suspecting intestinal injury, the surgeon at once cuts down and thoroughly explores the abdominal cavity. If no trace of injury be found, he closes the wound and awaits with confidence the issue of the case. He need not reproach himself for having made a useless incision, the danger of which in itself has been reduced to a minimum. If, on the other hand, an incised, lacerated, or perforated wound of the intestines be discovered, instead of abandoning the case he stops the bleeding, fixes the cut edges in close and perfect apposition, and, after the usual cleaning of the peritoneum, replaces everything in position. Numerous cases are now on record proving the triumphs which modern surgery has already achieved, and the future looks yet more promising. By careful observation, confirmed if necessary by experiment, the surgeon learns the manner of dealing with the most sensitive and most easily inflamed tissues of the body. Each little step, each little improvement, helps the movement onwards, until the final result excites the wonder and admiration of those who remember the less daring and less successful practice of a not very remote period.

Since the possibility of succesful intervention in cases of abdominal injury has been demonstrated, the great difficulty to be overcome has lain in the diagnosis. The symptoms of visceral injury, apart from hæmorrhage, are in many cases so obscure, and even so conspicuous by their absence, that the surgeon must often find himself in a very embarrassing position. To operate on an uncertain diagnosis is to expose the patient to an unnecessary risk, while to leave him until the diagnosis can be relied upon seriously lessens the chance of recovery. On the whole, Sir William MacCormac is of opinion that the former course is less dangerous to the patient than inaction.

Not the least interesting portion of the paper is the history of cases in which tentative operations have been performed for severe injuries involving rupture of one or other of the viscera. Though by no means uniformly successful, they mark the path which is to be followed in treating such cases, and point the way to better results in the future. The great point to bear in mind is the desirability of preserving, or, if necessary, restoring, the continuity of the gut. Not only is the patient spared the inconvenience of an artificial anus, but the risks of extravasation are

in reality less when the cut edges of the gut are properly sutured than in the alternative proceeding.

The subject of the treatment of wounds of the intestines cannot fail to be of interest to surgeons generally. Even in civil life such cases are frequent enough to render a knowledge of the best methods of treatment indispensable.

Moreover, it is in civil life that the surgeon can interfere with the greatest hope of success. The injuries, as a rule, are less extensive, treatment is more readily available, and the conditions under which it is carried out are incomparably more favorable.—*Quarterly Compendium of Medical Science.*

INTERFERENCE WITH LOCOMOTION AS A UTERINE SYMPTOM.

GRAILY HEWITT, M.D., F.R.C. P., of London, says: Considering the very large number of cases in which "inability to walk easily," "pain on walking," or various modifications of the symptom occur, it is remarkable that so few practitioners, comparatively speaking, pay any attention to it, or even treat the symptom seriously. There can be no doubt, however, that patients themselves look upon this symptom as a serious one, and indeed in most cases speak of it, when they are allowed to express their unbiased opinion on the subject, as an inconvenience which most seriously affects their comfort in life, and for relief of which they would be willing to make great sacrifices.

The above is a general statement. Any amount of evidence is obtainable in regard to its accuracy by interrogating patients, which should be done, not by leading questions, but by requesting them to state what are the principal inconveniences of which they complain. This method of inquiry will reveal the fact, that patients attach more importance to this inability for locomotion as interfering with their comfort than almost any other. For this reason, if for no other, this symptom is deserving of particular attention, and its explanation is a matter of great interest.

There is no difference of opinion as to the necessity for rest and the horizontal position in cases where there is found to be present marked tenderness or signs of inflammatory action in the uterus or its immediate neighborhood, the presence of such inflammatory action being revealed more or less decidedly by the results of a digital examination. It is not necessary to point out in such cases as these that difficulty or pain in locomotion are connected with, and due to, the inflammatory condition of the uterus or structures adjacent. In such cases no one considers it surprising that the patients should prefer to keep quiet, and the medical attendant usually and very properly advises that the horizontal position should be maintained.

There is another class of cases in which the pain on movement is found to be connected with laceration of the cervix and os uteri during some previous labor. These cases present themselves oftener than is generally supposed; the torn surface is continually irritated and stretched when the patient is walking, or standing, eversion of the lining of the cervix occurs, and a chronic source of irritation is set up. It is not infrequent in such cases to find also, from time to time, small localized cellulitic exudations and more or less tenderness to the touch.

The cases I have however more particularly in view, are those in which no particular sign or presence of inflammatory lesion of the body of the uterus or of the cervix and os uteri is detected

on vaginal examination, no tenderness to touch, and an absence indeed of what may be termed spontaneous pain. The characteristic is, that so long as the patient remains quiet, there may be little discomfort; but the upright position, or the act of walking, induces pain or an uncomfortable sensation, which is so decided, that in the end the patient avoids walking as much as possible. Thus originates in not a few cases a chronic invalidism, the starting point of which will, on inquiry, generally be found to have been habitual pain on attempting ordinary exertion.

Patients suffering in the manner now described, and not presenting obvious signs of presence of inflammatory action in the pelvis, are often looked on as fanciful, or hysterical, or disposed to exaggerate their sufferings. No doubt there are differences in regard to the manner in which different individuals bear pain, but the pain nevertheless has to be accounted for, and in the most typical cases it must be remarked, the patient is obviously and strongly desirous of living an active life, and anxiously seeks means to enable her to do so.

There are, it should be here remarked, cases in which general debility, associated with disorder of the heart or lungs, or general nutrition, giving rise to a certain incapacity for locomotion; but in such cases what the patient complains of is prostration after walking, whereas in the cases to which I desire to call attention, the walking power is often really good, but the exercise of that power gives rise to such discomfort internally that it cannot be kept up for long together.

Associated with the presence of pain in one or other groin, or in the back, there is frequently experienced a bearing-down sensation. The most common seat of this pain is in the groin or the pelvis on one side or other behind this spot. Now, the question is, what interpretation is to be placed on the pain arising from locomotion, when not obviously connected with some inflammatory condition? The answer is that the movement in question is painful because it imparts an unusual amount of movement, or an unusual kind of movement, to the uterus or to certain parts of the uterus. The uterus enjoys naturally a power of motion backwards, forwards, laterally, and upwards or downwards, within certain restricted limits. It enjoys flexibility also within certain limits. Unusual flexibility is not seldom associated with excess in degree of the other movements, as well as with peculiar tendency to lateral movements.

These excessive movements are, or may be, painful and productive of pain. They are liable to be produced by standing or by locomotion. Frequently they are brought about in the first instance by excessive locomotion or analogous causes (straining, over-exertion, etc.), and subsequently the evil state of things thus produced is intensified and temporarily aggravated by even trifling exertion.

The proof that the foregoing is the true explanation is easily obtainable by watching a few cases, and observing the effects produced on the position and shape of the uterus by exertion. Not less useful in obtaining valuable evidence is the analysis of the patient's symptoms, as described by herself, whereby it is made often quite clear how and why it is that the discomfort complained of arises.

In most cases where this kind of pain is experienced, the uterus falls lower than usual in the pelvis, but more generally we find that the body of the uterus is the part which particularly is to be felt lower than usual. In fact, according to my experience, simple descent of the uterus, unattended by marked version or flexion, gives rise to little inconvenience within certain limits. As regards retroflexion, most authorities are content to regard this as a real pathological condition. As regards anteflexion, however, which I believe is

responsible for the pain now under discussion, in the large majority of cases, there is less unanimity. In fact, many deny that anteversion and anteflection are pathological at all. True, slight anteflexion and slight anteversion may be admitted as a definition of the shape and position of the normal uterus, but there are various degrees of this ante-displacement and flexion met with, which as the result of my experience are liable to be attended with grave symptoms. The pain described above as produced by locomotion, is one of the grave symptoms produced by severe anteversion or anteflection of the uterus. The reason that this has not been generally admitted is, I believe, that sufficient pains have not been taken to differentiate slight normal anteversion and anteflexion with a properly mobile uterus from severe degrees of this kind of displacement and change of shape. The normal anteflexed uterus oscillates within slight range, recovering its position and shape after moderate disturbance. The abnormally flexible uterus gives way to a greater extent, and the extra amount of flexion, as well as descent involved, gives rise to pain. In cases where the uterus has gradually fallen lower and lower it is apt to become fixed, and does not recover its true position after exertion. This constitutes a condition in which fresh exertions occasion pain, owing to the increased pressure downwards, and under these circumstances, the slightest exertion gives rise to discomfort.

"Uterine dyskinesia" is the term which I have employed in describing the symptoms specially defined in the foregoing remarks. It is as common as leucorrhœa, and more common than most other uterine symptoms, and has a very definite and well-marked place in uterine symptomatology.

One of the most important arguments adduced in reference to "uterine dyskinesia," its nature and explanation, is that whatever tends to preserve the uterus in a state of repose is almost invariably successful in giving the patient relief. In acute cases of flexion, even of the worst kind, great benefit is derived from placing the patient in such a position that the force of gravity no longer acts unfavorably upon the uterus. Thus, in cases of anteflexion the recumbent dorsal position with hips raised is the one to be selected, whereas in cases of retroflexion the very opposite is necessary. Still more marked results follow when steps are taken by internal mechanical treatment, to raise the fundus, whereby the flexion is lessened in a more decided manner. Now, the fact that these beneficial results do follow, and the patients obtain—it may be said almost invariably—relief by these positional or mechanical methods of treatment, constitutes an argument of no little value in favor of the view of the subject which has been above maintained.

In the foregoing observations I have made no attempt to show why it is that excessive movements and change of shape of the uterus therewith associated, give rise to pain during locomotion. I have simply insisted on the fact that difficulty in locomotion in women is so very generally met with in cases where these excessive movements and changes of shape of the uterus exist, that there can be no doubt that there is an intimate relation between them, the latter as cause, the former as the effect. —*Quarterly Compendium of Medical Science.*

THE RHEUMATIC ELEMENT IN CHOREA OF EARLY CHILDHOOD.

DR. Octavius Sturges, of London, says: Chorea and rheumatic arthritis, whether in union or apart, are first discernable at a period of life which though past infancy is yet near enough to that age to retain some of its characteristics. Now, in infancy morbid phenomena are the most generalized, and concern mainly the nervous system, the excitability of whose reflex centers is excessive. At this age impressions of the most various kinds, whether central or peripheral, have a common issue in convulsion—convulsion which if not general is so variously and capriciously bestowed that the part selected for spasm gives but little guide to the source of it. Even when infancy has passed, and convulsion begins to limit its area, there is still a remarkable indifference and changefulness in its modes of display. Thus, with a young child spasm of the larynx will very readily pass to the diaphragm, so that there shall be stridor or laryngismus one day or one hour, and dyspnœa the next. And speaking generally, many central lesions—cerebral hæmorrhage, tumor, embolism—which in after life give definite notice of their seat by means of the particular muscles they affect, are in early childhood so confused together that any attempt at localization would be futile. The nervous function is as yet imperfectly differentiated; it is unable to appreciate various sources and modes of irritation, or to separate them one from the other. And so long as this process of differentiation remains incomplete we should expect (as we find) that those morbid phenomena which, as there is independent reason for believing, have a real kindred—depending, so to say, upon the stimulation of neighboring centers — should for the while be merged and confused together. But growth and use have a constant tendency to draw them apart. Differentiation becomes more accurate, while at the same time external and accidental circumstances impart their own bias in this direction or in that.

Let me make my meaning plain by an illustration. Take any of the examples that have been already quoted of young children exhibiting side by side chorea and rheumatic arthritis. In these we have a group of symptoms, motor, cardiac, articular, signals in common of some nervous disturbance. Here, no doubt, are the elements out of which in later life we construct two diseases. But at present there are not two, but one. And by their appearance at this exceptionally early period of life they prove a special liability on the part of their subject both to chorea and to rheumatic arthritis. Now, there are in the world choreic inducements, and rheumatic inducements, and there are epochs of life which are favorable now to the development of the one disease, now to the other. And so in life's progress it will depend very much upon accident whether the child supposed shall develop chorea or rheumatism. She is ready for both, yet with a varying preference which is determined mainly by age. But this comparative indifference is of short duration. Let a child be encountered with consequent rheumatism, or a sudden alarm with consequent chorea, and either of these disorders will impress its own likeness and impart a proneness to repetition. But it is not the cause alone that has to be considered, there is the season of life as well. Chorea, for reasons that need not now be discussed, is a child's liability, favoring the female sex. Rheumatism is a young adult liability,

with no marked sex preference except (as has been shown) in early childhood. We see, therefore, in that later period of childhood, when the two diseases have, so to speak, joint reign, the one or the other occurring by preference according as accident has determined the character of the early attacks, while still the liability to suffer in either way is not yet at one end. Up to a certain age fright or nervous excitement may cause chorea in a rheumatic subject, or exposure rheumatism in a choreic subject. But soon this double liability ceases. That time of life comes when the reign of chorea is feeble and nearing its end, while rheumatism takes wider expansion, and becomes endowed with many prominent characteristics which have been hitherto absent. But it is needless to pursue the subject further. My main design, indeed, is not to discuss theories, but to call attention to facts which have only now become known to me. Looking at chorea as a whole, I have always sided with those who maintain that its relationship to rheumatism is often exaggerated, and that the manner of the association in certain instances is far more striking than its frequency upon the whole. That is my contention still; but as I now perceive, it is incomplete. A full examination of the question, from the point of view selected in the present paper, compels the further conclusion that chorea and polyarthritis in their pathogenesis are nearly akin, while at the same time, as I venture to think, it suggests the reason why these two affections, although cradling together, should have but a short-lived intimacy, as well as the nature of the agency which soon begins to relax the bond of union and at length altogether dissolves it.—*Archives of Pediatrics, May, 1887.*

ON MERCURIALISM IN LYING-IN WOMEN UNDERGOING SUBLIMATE IRRIGATION.

DAKIN makes a valuable contribution to the question of mercurialism following the use of corrosive sublimate as an antiseptic. As is now well known, Tarnier, in 1882, was the first to use this drug as an antiseptic in puerperal cases. The general outcome of its use has been a great diminution in the mortality and morbility of maternities, a result somewhat clouded by occasional cases of poisoning with even fatal results, as many as eight deaths having been reported. The cases known are as follows:

1. *Stadtfeldt's Case* One intra uterine injection, 1:1500, five days after labor. Death on eleventh day. Kidney and intestinal changes found.

2. *Somer's Case.* Vaginal, 1:1000.

3. *Winter's Case.* Intra-uterine douche, 1:1000; vaginal afterward of 1:1000. Death on fourth day. Post-mortem, gangrenous colitis and peritoneal exudation.

4. *Vohtz.* Intra-uterine injection, 1:750, after abortion. Death on eleventh day after intestinal and kidney symptoms.

5. *Partridge.* Two intra-uterine injections, 1:2000; dysenteric symptoms and death.

6 and 7. *Thorn.* Intra-uterine douche after missed abortion, 1:1000; vaginal douche, 1:1000 in forceps case. Renal and internal lesions.

8. *Ziegenspeck.* Death on thirteenth day after three injections of 1:5000. No bad symptoms until second intra-uterine douche on eighth day; patient died five days afterward.

9. *Netzel.* Intra-uterine douche, 1:1500, on seventh day; abdominal

pain then complained of; renal symptoms with albumen and lime and lime salts in urine. Death on twenty-second day.

10. *Gustav Braun.* Douche during first stage; episiotomy performed during second stage, and intra-uterine irrigation, 1:1000, after expulsion of placenta. Diarrhœa on third, and collapse on seventh.

11. *Hofmeier.* One douche of 1:1000. Death on sixth day.

In all cases of douching Keller found mercury in urine, and also albumen.

Dakin then gives the results of the use of sublimate irrigation in 170 patients confined in the General Lying-in Hospital, London, under the charge of Dr. William P. Champneys. The sublimate is used as follows: Hands and instruments are disinfected with 1:1000, the vagina is douched after labor with 1:2000, two pints, at a temperature of 115°–120° F., being used. For the first two days three pints of 1:2000 at 110° F. are employed, and then the strength is reduced to 1:4000, The patient occupies the dorsal posture, and after the douche is finished turns on her hands and knees, to evacuate any residuum.

Symptoms of poisoning usually appeared between the fourth and seventh days, and were usually diarrhœa, with blood and tenesmus, sometimes vomiting, patchy tongue, thirst, and loss of appetite, fetor of breath, salivation, with tenderness of teeth and gums, as well as red line on gums. The urine contained albumen in 11 of the cases.

Details of the one fatal case are given, with examination of kidneys.

He comes to the conclusion that a strength of 1:4000 is sufficient for douching.—*Quarterly Compendium of Medical Science.*

THE THERAPEUTIC USES OF COCAINE.

THE value of coca preparations for internal administration is so positively assured by a large number of definite experiments in different clinics, that the practitioner can no longer refuse to admit the important service to be derived from it when given in response to definite indications. As an analeptic or restorative agent, it has been long known, whilst most recently it has been recognized as an excellent stomachic tonic, and has, for example, been recommended by Professor Pott, of Halle, as a remedy for the enervating diarrhœa of children. He claims the most brilliant results from the use of the alcoholic tincture of coca leaves for this purpose. Of much greater significance, however, seems to be the therapeutic effect of cocaine as an antispasmodic, a fact that has been established by Pott and others in cases of epilepsy, eclampsia, spasm of the glottis, pertussis and chorea. It therefore seems opportune to add to the results some further observations of the successful application of cocaine in the practice of the writer to cases of whooping cough, neuralgia of the stomach, and bronchial asthma.

I. COCAINE IN CASES OF WHOOPING COUGH.

During the past summer I made the experiment of the application of cocaine in twelve cases of whooping cough, in children from 1 to 7 years of age, that had been sent to the Sanitary Institution of Colberg. At first I tried the commonly recommended practice of touching, several times a day, the posterior wall of the pharynx and the epiglottis with a 10 per cent. solution of the drug. But no good effects at all followed this; indeed, the mechanical irritation of the brush produced, on the contrary, the most violent paroxysms of coughing on the part of the struggling little patients.

I therefore ordered instead a one per cent. solution (gr. iss. to ʒiiss. aquæ amygdal. am.) for internal administration, giving the child, according to its age, gtt. 10–15–20, three to four times daily in a lump of hard sugar, with the object of keeping the cocaine for a longer time in intimate contact with the pharyngeal walls by chewing than by simply swallowing the liquid. On an average, within three days the attacks became much less severe, the nights became more peaceful, the debilitating emesis ceased, and in two to three weeks the persistence of a slight catarrh was all that remained. The children, in the fresh sea-breezes and with a few salt-baths, quickly regained the most perfect health. Although it is well-known that a change of air, especially a stay at the sea-shore, operates most happily in relieving whooping cough, the author emphasizes his conviction that during no previous summer has he seen the acute stage of the malady so quickly and easily passed through as during the last season, when he adopted the use of cocaine as above described.

II. COCAINE IN GASTRIC NEURALGIA.

The author also reports the very favorable action of the internal administration of the hydrochlorate of cocaine in three cases of severe neuralgia of the stomach in young women of 20, 22, and 26 years, in whom there was neither pronounced anæmia, suspicion of gastric ulcer, nor disorder of the genital functions. It was best borne when conbined with belladonna in pill form:

℞. Cocain. hydrochlor..gr. iss.
Extr. Belladon.....gr. viiss.
Extr. Rh.....q. s.
To make 20 pills.
Sig. One pill after meals three times daily.

The first two cases were two sisters of Warschau. They consulted me in August of the previous year because of seizures of violent gastralgia immediately after every surf-bath,although they had suffered from lighter attacks at times before this. Both of the girls, as I have said, had the appearance of enjoying perfect health; there was no trace of anæmia, and all functions in the best order; palpitation of the stomach showed no sensitive spots. Several days' use of the cocaine pills gave decided relief. The same formula was used later at their home during the winter, with the same happy results.

In the third patient the gastralgia was combined with hiccough that came on during the night and was extremely tormenting. In this case, it is true, I was unable to put aside entirely the suspicion of hysteria, although the lady seemed in every respect to be healthy and strong. Cocaine in this instance produced its anti-spasmodic effects. Two pills were given at night before going to bed, with the immediate result of bringing better sleep. This, with sea-bathing, finally affected a complete cure.

III. COCAINE INHALATION IN BRONCHIAL ASTHMA.

I have only one case of bronchial asthma to report, but that one was very accurately studied by me, and cocaine, by inhalation, was used with the most excellent results. To my knowledge it has not previously been used for these indications in the same form. The patient was a solidly-built woman of fifty years, from the neighborhood of Colberg. In November of the previous year, after a severe cold, she was one night suddenly seized with what seemed from all appearances to be a laryngeal croup. I found her nearly stifling. Breathing was terribly difficult, all the accessory muscles of respiration in extreme activity, the face livid, the extremities covered with cold sweat, the pulse small and excessively rapid. A powerful emetic fortunately succeeded in speedily bringing out of the larynx and trachea a large mass of tough, fibrous membrane, giving her speedy relief. Succeeding this croupous attack followed an obstinate bronchial catarrh, lasting several weeks, resulting in frequent and severe asthmatic seizures. Morphine, internally or subcutaneously,

soon ceased to afford relief, so that I hit upon the happy thought of trying the inhalation of cocaine. I found it, in fact, the best remedy, and I do not hesitate most readily to advise its use in like circumstances, when morphine is contraindicated, or has failed to produce the desired effect.

In my case I allowed the patient to inhale about ʒv. of a one per cent. solution, by means of one of our common inhalation apparatuses, requiring about five minutes' time when the machine is properly in action. This amount was entirely sufficient the first time to cut short a severe attack. Subsequently the patient learned to begin the inhalation at the commencement of the attack, and then ten or twenty inhalations were sufficient to give instantaneous relief.

Besides, it must be remembered that one cannot inhale much more than this amount without superinducing the known effects of the drug, the contraction of the vessels of the mucous membrane, the extreme resultant dryness, and an uncomfortable feeling, ending in producing a sensation of tickling in the throat, whilst at the same time, lips, tongue and tonsils show the greatest paleness and insensibility.—*Dr. Weissenberg, in the Allgem. Med. Cent.-Zeitung.*

THE GRAFTING OF HUMAN BONE.

ON the 25th of November, 1886, a young man, seventeen years of age, had a complicated fracture of the right leg, about its middle, from which escaped a considerable fragment of the superior part. Succeeding this there were severe phlegmonous complications, the fractured extremities necrosed and were eliminated, resulting in a considerable loss of bone. In December, 1886, the fracture had not united, and the bones were from 35 to 40 milimeters (about 1½ inches) apart, with a fibrous cord uniting them. The fibula, which was intact, formed a splint for the tibia, and had prevented a union of the osseous extremities. M. Poncet then tried the experiment of an osseous graft, and executed it in the following manner: From a leg which had just been amputated, on account of traumatism, he took the first phalanx of the great toe, dissected away its cartilaginous surfaces, getting a fragment one inch in length, which he antisepticized in a tepid solution of corrosive sublimate of one to two thousand. The pseudarthrosis having been exposed, M. Poncet cut away the fibrous bridge, polished the two bones, and placed the osseous graft in the fibrous tissue so as to bring it in contact with the inferior fragment of the tibia. There was no reunion; careful antiseptic dressing was continued. Sixty-two days after the operation the graft was completely covered with fleshy granulations, except in a space of three to four square centimeters in the middle, where the bone appeared of a pale pink hue. The mobility of the pseudarthrosis persisting, M. Poncet decided to make a resection of the osseous suture. In performing this operation he removed the graft from the attached portions of the bone, and observed the following important facts: The graft was intimately united to the tibia at one of its extremities by a somewhat dense, tough, fibrous non-osseous tissue. Its entire periphery was covered by the fibrous tissue and a layer of more and more dense granulations. The bone itself was perfectly vascular and alive, eroded at some points by the granulations heaped against the surface. This result shows that legitimate hopes may be built upon this method.—*Le Concours Medical.*

ON THE ACTION OF HYDROCHLORATE OF HYOSCINE.

UNDER the direction of Kobert, Sohrt has made a series of experiments on the physiological action and therapeutic use of hyoscine, the results of which are published in the above paper. The conclusions arrived at by Wood, as to the manner in which hyoscine influences the various organs, are to a large extent confirmed, but on some points the views of the American and German observers are not in accord.

In healthy men, the injection of one-seventieth of a grain gave rise, according to the latter, to disturbances of co-ordination and some muscular weakness; the head felt heavy, sank on the shoulder, and could only be lifted up with difficulty; the limbs likewise felt heavy, and the upper eyelid could hardly be raised; there was a sense of fullness of the head, the pupils were dilated, and a tendency to sleep was noticed in every case; the throat was dry. The hallucinations, delirium, nausea and trembling which have been described by Wood and other observers as following the administration of the hydrobromate and hydriodate of hyoscine, were not observed by Sohrt and Kobert.

Hyoscine, according to Kobert, even in large doses, is well borne by some of the lower animals; a cat recovered after nine grains, and a small rabbit was unaffected by three grains. After large doses it is excreted unchanged by the kidneys. It influences but little the cerebral functions of the lower animals, but has a markedly calming effect on man when the brain is excited. The depression of the reflex excitability of the spinal cord, which, according to Wood, was present in lower animals after the administration of the hydrobromate, was not observed in the experiments made by Sohrt.

Claussen, who published his investigations on the action of hyoscine in 1883, stated that this drug stimulates the vagus and decreases the heart's frequency. Wood concluded that it had no influence on the vagus. Kobert, however, is of opinion that it paralyzes the vagus terminations in the lower animals, and probably also in man. In a lunatic with depressed circulation, which he attributed to inhibition exerted by the brain on the heart, he found that hyoscine always improved the pulse. In healthy men, however, increased rapidity of the pulse, which ought to follow vagus paralysis, was not always noticed. It antagonizes the influence of muscarin on the heart. In cold and warm blooded animals it dilates the peripheral vessels, probably by its paralyzing influence on the ganglia contained in their walls. Kobert does not think that it influences the vaso-motor centre, as the experiments of Wood led him to believe. The respiration is unaffected, according to Kobert, while Wood considers that this drug has a depressing influence on the respiratory functions, acting in all probability on the respiratory centres.

Hyoscine certainly diminishes the secretion of saliva, hence the drying of the throat which follows its use. The secretion of perspiration, too, is lessened, and some of Sohrt's patients who tried both hyoscine and atropine to check sweating preferred the former drug.

It is well known that muscarin increases intestinal peristalsis; hyoscine antagonizes the influence, paralyzing therefore the nerve apparatus on which the muscarin acts.

According to Dr. Emmert of Berne, hyoscine acts more energetically and rapidly as a mydriatic than either atropine or duboisin, and is effective even in solution of 1 part to 1000. Kobert, however, states that complete dilatation

of the pupil is only produced by full doses. It acts, he says, by paralyzing the periphery of the oculo-motor nerve. Sohrt found that 1-140 of a grain dilated his pupils without paralyzing accommodation. Sohrt gave subcutaneously from 1-70 to 1-140 of a grain to a number of lunatics suffering from mental excitement and insomnia, who had taken other calmatives in vain. He administered the drug about one hundred times. Sleep was always produced, and no threatening symptoms were noticed.

As a rule, the patients fell asleep in ten to fifteen minutes after the injections, and did not awake for five to eight hours. A little fullness of the head was at times complained of during the morning following an injection. It is specially worthy of remark that the hyoscine produced good results in several cases in which hyoscyamine in full doses have been ineffectual. Kobert is inclined to consider hyoscine beneficial as a sedative in mental diseases only. —*Arch. f. exp. Path. und Pharm. XXII., Hft. 6.*

THE MORBID ANATOMY OF THE FALLOPIAN TUBES.

AN article descriptive of the morbid conditions in twenty-five cases of tubal disease operated upon by Prof. Martin is contributed to the current issue of Virchow's *Archiv* by Dr. E. G. Orthmann. It should be read with interest at this time, when so much is being said regarding the clinical aspect of the chronic inflammatory changes to which the uterine appendages are prone. Dr. Orthmann describes in detail the histological characters of his specimens, and in the first place draws attention to the normal structure of the fallopian tube. The wall of the tube is composed of three layers—the mucous membrane, which, covered with ciliated epithelium, is disposed in longitudinal folds, which towards the free extremity become branched and divided, ultimately forming the so-called fimbriæ; the muscular layer, greatly developed in the uterine segment of the tube, and diminishing in thickness towards the abdominal extremity; and the outermost connective-tissue layer. The morbid conditions described fall under five heads, and each case is related in full. Of *catarrhal salpingitis* there were nine cases, six being unilateral. The disease is not limited to the mucous membrane, nor does the ciliated epithelium at first suffer, the change commencing with thickening of the mucous membrane, and consequent irregular swelling of its folds. The swollen folds coming into contact, the cells are compressed, degenerate, and disappear. More or less cystic cavities form between the thickened folds of mucous membrane; and blood-vessels in the infiltrated submucosa may rupture, giving rise to hæmorrhage into the cavity of the diseased tube. Such hæmatosalpinx may result from a closure of the fimbriæ. The muscular and fibrous coats of the wall of the tube may also be thickened, often with atrophy of the muscular fibers themselves. In five cases the "ostium abdominale" was occluded, partly by hypertrophy of the mucous folds, partly by adhesive peritonitis. The following varieties of catarrhal salpingitis are enumerated, the term "catarrhal" being obviously used in a wide sense:—(1) Salpingitis cat. simplex or endosalpingitis; (2) S. diffusa or interstitialis, which comprises (*a*) S. hæmorrhagica and (*b*) S. follicularis. Of *purulent salpingitis* eight cases are described. In seven of these the most careful examination failed to detect any bacterial organisms—a negative result which suggests either that the organisms were

either remarkably scanty (as usual in chronic suppuration), or else that they could not be manifested by the methods used; reference, however, is made to the discovery by other observers of tubercle bacilli and of gonococci in tubercular and gonorrhœal salpingitis, and Dr. Orthmann himself has quite recently recorded an instance of the last named variety.* In purulent salpingitis only traces of the ciliated epithelium remain where protected by the folds which are now converted into wide septa between cavities filled with pus; whilst the mucous membrane is more or less replaced by the granulation cells of the inflammatory process. In places the muscular coat may be laid bare by the destructive process. This coat may also be thickened by infiltration of round cells, and the vessels will be increased. In six cases the ostium abdominale was occluded, and of the others one had a fistulous communication with an ovarian abscess. There were two cases of *hæmatosalpinx*, in one of which there was atresia of the ostium abdominale, the mucous folds were stretched, and the walls somewhat atrophied. In the other case the tube was occluded by a kink. Four cases of *hydrosalpinx* are described, three of which were unilateral. In all the supeficial epithelium was not much altered; in one case the mucous folds were hypertrophied, but in the rest they were dwindled, and the muscular coat was also atrophied. Lastly, there were two cases of *pyosalpinx*, a condition generally dependent upon atresia of the tube. The walls were thickened and their vascular supply increased. No microbes could be found in the purulent contents. Dr. Orthmann also gives a summary of these cases, from which we gather that in the twenty-five operations there were three deaths—one from collapse and two from peritonitis. Of these cases twenty-one were simple salpingotomies (two deaths). In two instances the patient underwent a second laparotomy. In one a right hydrosalpinx was removed seven months after the extirpation of the left appendages; in the other, a large hæmatoma of the right ovary had been removed thirteen years before. The majority of the patients had presented no disturbance of menstruation; in five cases it had been of late somewhat profuse; in five there was severe dysmenorrhœa, and in three menstruation was irregular. The chief and universal symptom was pain in the abdomen and groin, whilst in ten cases there occurred hæmorrhage, and in seven marked uterine discharge. As to the etiology of the cases, ten were ascribed to gonorrhœa, these including six purulent cases, two catarrhal, and the two cases of hydrosalpinx. Four were post-puerperal, but in the remainder no definite cause could be assigned. Two cases were associated with cancer of the uterus, one with myoma, and one with an ovarian cyst. The ovary was found diseased in all but two of the cases. In eight there was chronic ovaritis, two being further complicated with hæmatoma of the ovary and one with hydrops folliculorum. In four other cases there was ovarian hæmatoma, and in three others hydrops folliculorum, without other lesions. There were five cases of ovarian abscess, which in two cases communicated with the tube by small openings, and in one the tube and ovary were conjoined in a common abscess sac. One case of catarrhal salpingitis was associated with an ovarian cyst of the size of the fist. Atrophy of the ovary occurred three times, and parovarian cysts in four cases; in three cases there was hæmatoma between the ligaments, and in one an abscess. We have called attention to this contribution because it seems to us that the pathology of these conditions has yet to be worked out, whilst the material is rapidly accumulating for a thorough study of the subject.

*Vide Berl. Klin. Woch., No. 14, 1887.

PROF. BROWN-SEQUARD ON THE PATHOLOGY OF THE LARYNGEAL VAGUS.

WHATEVER of scientific truth may eventually be established concerning the reflex relationship of the cervical region with the brain and bulb, now set forth by Prof. Brown-Sequard, there can be no question of the remarkable suggestiveness of his conclusions. He showed some years ago that puncture of a certain region of the floor of the fourth ventricle, in close juxtaposition to the vaso-motor and cardiac centers, but not identical with them, has the effect of reducing to the lowest possible ebb the nutritional changes of the organism, so that the blood in the veins runs as red as that in the arteries; for the protoplasmic tissues neither absorb oxygen nor disengage carbonic acid, being, in fact, in a state of suspended animation. But this is not the only cessation of activity that may be brought about as the effect of puncture of the floor of the fourth ventricle. The activity of the cerebral cortex may also be suspended by a similar operation; and actual death may also occur. To sum up in a few words the latest conclusions of the distinguished experimental pathologist, we may state that the skin of the neck covering the larynx has, like stimulation of the larynx, though in a less degree, the power of inhibiting the sensibility of the body, and, further, that mechanical irritation of the larynx, trachea, and perhaps of their subjacent skin, possesses the power of causing death, in the same way as though the bulb and medulla oblongata were irritated. These are extremely important conclusions, and it will be well to examine the evidence on which they are founded. The following is the gist of Prof. Brown-Sequard's communication to the Académie des Sciences.

It has often excited surprise that suicide by cutting the throat should be carried out with such determination, and apparently at the cost of enormous suffering, indicating an almost superhuman courage. The surprise, however, would be considerably lessened, if it were true, as is now asserted, that mechanical irritation of the skin covering the larynx, as well as the larynx itself, causes total analgesia, as seems possible from the remarkable experiments Professor Brown-Sequard made some four years ago. After having made a longitudinal incision through the skin of the middle line or transversely from one side to the other, in the anterior cervical region, the Professor observed in a great number of experiments, especially in dogs and monkeys, that he could lay bare, cut, bruise, galvanize and even burn the various structures in the anterior two-thirds of the neck without causing any great pain, and sometimes without appearing to cause any pain whatever. Such facts —verified hundreds of times during the last five or six years—prove that these structures have the inhibitory property of causing general analgesia, though in a varying degree, according to the precise structure stimulated—viz.: (1) The maximum effect is produced by stimulation of the mucous membrane of the larynx—*i. e.*, of the parts supplied by the terminal ramifications of the superior laryngeal nerves. (2) In a less degree irritation of the trunks of these nerves, and in a still less degree of the trunks of the vagi above the point of emission of the superior laryngeal nerves, causes the same result to appear. (3) A transient analgesia of variable completeness may be caused by ligature of the trachea. (4) The minimum effect is caused by the irritation of the skin cov-

ering the throat, and especially of that over the larynx proper. Although incision of the various structures is the most effective in bringing about the analgesic effects, it is not the only irritation that possesses this property. The trigeminal and other sensory cranial or spinal nerves in their trunks or ramifications do not appear to be endowed with the special power that the vagus nerves and the nerves of the cervical region possess. Surgeons performing tracheotomy during the asphyxia of a patient may be incorrect in supposing that the asphyxia confers immunity from pain, for doubtless the analgesia is partly owing to the very incision of the skin of the front of the neck. Other experiments on animals seem to show that stimulation of the anterior cervical region, especially the larynx, but also the trachea, and probably the superjacent skin, has the power of stopping the heart, inhibiting the respiration, and suspending consciousness. When Prof. Brown-Sequard has killed dogs by cutting their throats, he has found that nearly always, if not always, death occurred without convulsions, without agony, in a state of perfect syncope, permitting the protoplasmic tissues of the body to preserve for a long time their special properties: the blood running red from the arteries to the veins, and thus presenting an absolute contrast to death due to asphyxia, where the arteries are filled with black blood.—*The London Lancet.*

CASE OF INTESTINAL OBSTRUCTION FROM IMPACTION OF A GALL-STONE IN THE ILEUM.

I WAS called to Mr. C. E., aged fifty-seven, on Sept. 20, 1886, on account of constant sickness followed by faintness. On inquiry I obtained the following history. He had enjoyed fairly good health, but had had an attack of typhoid fever twenty-eight years ago. He was always disposed to be constipated, but by the free use of aperient medicine had kept his bowels acting. He had been a somewhat free liver, and for the last few years had suffered from business anxieties. On July 14th of this year (1886) he was seized with severe vomiting and acute pain in the epigastrium and right hypochondrium, followed by jaundice; the pain was intense for three or four days; the urine high colored. I could obtain no definite information about the motions; he was supposed to have passed a gall-stone, though nothing was ever seen in the motions. In a month's time he returned to business, feeling fairly well, but not losing the sense of uneasiness in the right hypochondrium. His bowels were more obstinate than ever, acting for the last time on Sept. 13th. On the same day he was seized with frequent vomiting of green bilious matter. On the 17th he consulted a physician in London, who carefully examined him, and finding nothing in the abdomen, attributed the vomiting to gastric catarrh, and advised him to come to Hastings, which he did on the 20th. On that day I found him complaining of great faintness, and of some pain in the stomach, mostly at the epigastrium, but to a less degree in the region of the cæcum and descending colon, with moderate tenderness in these latter regions. He was vomiting frequently, the vomited matter being very green, of an acid, disagreeable, but not at all feculent smell. His bowels had not acted for a week, nor had he passed flatus per anum. No tumor or special resistance could be anywhere felt in the abdomen. There was no abdominal distension, and no visible movement of the coils of intestine. The pulse was large, soft and

quick. He was sent to bed, moderate doses of opium administered, and an injection ordered, which failed of effect, probably from imperfect administration. On Sept. 21st, 22nd and 23d he had an injection each day of three or four pints of soap-and-water, which on each occasion brought away some green, offensive, solid, but not hard, lumps, after which the abdominal tenderness disappeared and the pain and sickness greately diminished, the character of the vomited matter remaining unchanged. He was taking ten minims each of the solution of morphia and tincture of belladonna every four hours, or oftener if required. His diet consisted of half a pint of milk and a little beef-tea in twenty-four hours; a beef-tea enema was given every four hours. On the 24th he was ordered a five-grain cathartic pill (U.S. Pharm.) at bed-time, followed in the morning by an injection through a long flexible tube. On the 25th two pills of the same were given, also followed by an injection, which brought away motions of the same character as before. The vomiting varied from once to three times in the twenty-four hours, but was becoming more distinctly unpleasant. Very little pain; no tenderness or distension; no wind passed per anum. On the 26th and 27th the injections were repeated, but no action followed, and on the evening of the latter day the vomiting was distinctly feculent. There was no distension of the abdomen. On the 28th Dr. Arthur Gamgee saw him with me, and suggested the employment of electricity, Chloroform was given, and a current from a large primary coil was used, being passed from one side of the abdomen to the other, and afterwards through the rectum, but although violent action of the abdominal muscles was produced, no other effect resulted. Nothing definite could be felt in the abdomen under chloroform, but Dr. Gamgee thought that he felt greater resistance in the region of the ascending colon.

The intestinal obstruction had now been complete for sixteen days. Some fæcal matter had been brought away by the injections, but this evidently came from below the obstruction. No flatus had been passed since September 13th, when the symptoms of obstruction set in. After careful consideration of the symptoms I now came to the conclusion that the case was one of impacted gall-stone in the ileum, and that there was little or no hope of relief except by operation. I was led to this diagnosis by the following points. The invasion was sufficiently sudden to bring it within the class of acute obstructions, and there was a total absence of distension of the abdomen. I therefore excluded all diseases of the great intestine, including volvulus. At the same time, the onset was not sufficiently sudden for an internal strangulation or twist of the small intestine. Moreover, there was a total absence of collapse, the vomiting had never been severe, it was not stercoraceous until the fourteenth day, and the pain was far from acute. The absence of blood or mucus in the evacuations brought away by the enemata, the completeness of the obstruction, and the fact that no tumor could be felt, even under chloroform, seem to negative the idea of acute intussusception. It was quite certain that there was no peritonitis, either chronic or acute. All these conditions being excluded, obstruction from a foreign body impacted in the small intestine, either at its narrowest part near the lower end of the ileum, or in some part narrowed by disease, seemed the only probable diagnosis. That the foreign body was a gall-stone I concluded from the history of hepatic colic ten weeks before, accompanied by little, if any, jaundice, and followed by uneasiness in the region below the liver, continuing up to the time of the attack.

On Sept. 29, at 1 P. M., Mr. Marcus Beck saw the case with me, and, agreeing in the diagnosis, proceeded to open the abdomen, assisted by Dr. Gamgee, Mr. Brodribb and myself. Mr. Beck has furnished me with the following ac-

count of the operation. The patient, having been placed on a table, was covered with a mackintosh sheet having an oval opening in the middle (an ovariotomy apron). The skin was then carefully cleaned with a 1 in 20 solution of carbolic acid. Ether having been administered a spray of carbolic acid was turned on. An incision was then made (about three inches in length) in the middle line, the middle of the wound being midway between the umbilicus and the pubes. The abdomen being opened, a coil of distended small intestine showed in the wound. The hand was passed at once into the right iliac fossa, with the intention of feeling for the cæcum, in order to ascertain whether it was distended or empty. Before reaching the cæcum, but close to it, a hard mass was felt in the coil of the small intestine. This was at once drawn up into the wound and out of the abdomen. It was then seen that the gut was completely plugged by a barrel-shaped body of great density. The gut was apparently healtly; its surface was shiny and perfectly free from any sign of inflammation. An attempt was made to push the foreign body forwards, the direction in which it should go being easily recognized by the distended condition of the intestine above it, while below the gut was empty; it would not move with any amount of force which it seemed justifiable to use. It was determed, therefore, to cut it out by a longitudinal incision in the intestine. The opening in the abdomen was carefully plugged with sponges which had been rung out of a warm solution of carbolic acid (1 in 40), and the coil of intestine was laid upon a flat sponge; a small hole was then made in the mesentery close to the gut, immediately above the foreign body; through this a piece of india rubber drainage-tube was passed and drawn sufficiently tight to occlude the gut, and clamped with a pair of forci-pressure forceps. In this way the escape of fæces from above was effectually prevented. A longitudinal incision was then made at the side opposite the attachment of the mesentery. It was about one inch and three-quarters in length, and was of sufficient size to allow of the escape of the foreign body without bruising the tissues of the gut. A small quantity of very dark fæcal matter escaped, which was immediately received on a sponge. The mucous membrane was intensely injected and terribly swollen. But little blood flowed from the incision. The gut having been cleaned, the edges of the wound were brought together by interrupted Lembert's sutures. Fine common sewing needles were used (No. 7), threaded with fine carbolized silk. The needle was inserted about a quarter of an inch from the edge of the incision, penetrating the serous and muscular coats only, and brought out about one-sixth of an inch from the edge; then inserted on the opposite side about one-sixth of an inch from the edge, and brought out a quarter of an inch. About a dozen stitches were required and were inserted. When all the necessary sutures were inserted they were tied. The closure seemed perfect, the mucous coat being turned in and the serous from each side brought well in contact. The piece of india rubber tube was now removed; it had made rather a deep impression in the gut, showing the swollen condition of the bowel. The impression began to disappear immediately, the circulation being rapidly restored in the pale part. The incision was then minutely examined to see if anything leaked from it, and nothing was detected. The coil of intestine was then carefully cleaned, the sponges plugging the abdominal wound removed, and the gut replaced in the abdomen. During the whole operation no blood or other foreign matter had escaped into the peritoneal cavity. It was not necessary, therefore, to clean out the peritoneum by sponging or washing. The external wound was then closed in the usual way. The anæsthetic was admirably administered by Mr. Brodribb, so that at no time was there the slightest trouble

from any movement on the part of the patient. There was but little shock. The wound was dressed with sal alembroth gauze, covered by a layer of sal alembroth wool. The foreign body was found to be a large gall-stone. It was somewhat the shape of a conical bullet, the advancing end being slightly conical, the opposite end flat. It was marked at its base by a smooth, slightly concave facet, evidently formed by contact with another stone in the gall bladder. The rest of the stone was rough on the surface, and glistening crystals of cholesterine could be seen upon it. This roughness must have considerably impeded its passage down the intestine. It measured 3⅞ in. in circumference, 1¾ in. in length. It weighed almost exactly an ounce. The patient rallied well from the operation. A dose of morphia was administered hypodermically, and at 9 P. M. the pulse was 100, and of good force; there was no pain or sickness, and the patient seemed to be doing well, but on the following morning the pulse had risen to 120, the countenance was anxious, there was slight distension and some tenderness of the abdomen, but no sickness. He died at 3 P. M., exactly twenty-five hours after the operation. No post-mortem examination could be obtained.

In the treatment of this case I was led to go somewhat beyond the orthodox way of feeding in intestinal obstruction by the willingness of the patient to take food, by the fact of its being retained several hours, and from its not, as far as I could see, in the smallest degree promoting vomiting, and perhaps also from having less faith in the value of nutritive enemata than some have. The medical treatment consisted of opium and belladonna—the doses, in consequence of the moderate amount of pain, being comparatively small—enemata, and, when they no longer acted, aperients. I was led to try aperients from the recollection of a case I had some years ago, when the combined use of aperients and enemata resulted in the passing, after ten days' absolute constipation, of a stone so large that its passage through the anus caused great suffering.

The following points seem worthy of further consideration in this case: 1. What was the cause of death? Unfortunately this question must remain doubtful. He did not die from shock, for he rallied well from the operation. Every precaution was taken to ensure cleanliness, no carbolic lotion except that upon the hands entered the abdominal cavity, the stitches seemed efficiently to close the gut, well carbolized silk was used, and yet from the period of death it seemed most probable that peritonitis was the cause. The gut, though not actually inflamed at the time of operation, was much congested and swollen. Most probably inflammation developed in the damaged gut after the operation, and in the weak state of the patient proved rapidly fatal. 2. When was the stone impacted? This could not be accurately ascertained. From the size of the gut and the situation in the abdomen it was probably in the lower part of the ileum, not far from its end. That it was the ileum is certain from the absence of the valvulæ conniventes in the part opened. 3. Was the operation necessary, or would it have been safer, having made the diagnosis, to trust to nature? This question is extremely difficult to answer. I find in the Index Catalogue of the library of the Surgeon-general, U. S. A., references to thirty-nine cases of impacted gall-stone. Of these I have been able, with the limited time at my command, to refer to only fourteen. Among them, I find, is a stone measuring 3½ in. passed safely after twelve days' obstruction. In another case there was a stone of a little over three inches, but there is no evidence that it passed down the small intestine; it probably ulcerated from the gall-bladder into the colon. Fagge also mentions one measuring 1 1-10 in. in diameter, which passed after seven days' obstruction. On the other hand, I found seven stones, proving fatal, which measured less than that from my patient; the smallest had a transverse circumference of only 2¼ in., and yet it blocked the lower end of the jejunum, and caused death after fæcal vomiting. It seems, therefore, that although it is possible for a patient to pass stones of this size through the ileo-colic valve, very few succeed in

doing so, and probably the percentage of recovery would be greater if operation were resorted to in every case as soon as the diagnosis is made. Unfortunately, however, the diagnosis is very rarely made at all. In almost all the cases I have met with, their nature was only cleared up at the post mortem examination. I can find no case but this in which the stone has been removed by operation. The disease is far more common in women than in men. In the fourteen cases I have been able to refer to only two were men.—*Bryan Holme Allen, M. D., in the Lancet.*

CLIMATE AS A THERAPEUTIC AGENT IN PHTHISIS.

I PROPOSE in this paper to consider four questions: 1. Does climate cure phthisis? 2. How does climate cure phthisis? 3. What climates cure phthisis? 4. What cases of phthisis are curable by climate?

1. Does climate cure phthisis? Yes, beyond question. To doubt this fact is to run counter to a vast mass of unassailable evidence and to give way to an unreasoning skepticism. I have met and talked with cured consumptives in many parts of the world—patients in whom the existence of the disease had been diagnosed by competent authorities, and the genuineness of whose recovery was testified by a long life of vigorous activity. These instances of complete recovery are, however, less common than cases of relative recovery, by which I mean those cases in which the morbid process in the lung becomes dormant and the patient lives out his days, but with diminished vitality, and maimed, as it were, for the rest of his life. It is an extremely important question to determine how many of these cases of cured phthisis are contingent upon the patient remaining in the country and climate where the cure was affected—are, in technical language, relative to his environment; and how many are so complete as to permit of a safe return to the unfavorable climatic conditions which prevail at home. Every practitioner who sees much chest disease has had distressing cases of consumptive patients who have gone abroad and apparently been cured, but who, yielding to that piteous home-sickness which sometimes assails the stoutest heart and disregards the plainest admonitions of prudence, have returned home, and returned to die. I fear that in a large proportion of cases the cure of phthisis is contingent and conditional, and I do not think we can often regard without serious concern the return of a cured consumptive to those climatic conditions which originally produced or predisposed to the disease.

2. How does climate cure phthisis? Not usually by a single or specific quality of the air or by any definite combination of meteorological conditions. The old notion of "healing air"—viz., that the air, by virtue of some inherent virtue, exercised a direct local curative influence upon tubercular deposits—is a delusion. Bournemouth and Arcachon profess to cure phthisis by the balsamic emanations from their pine forests, but if such emanations have any influence (which is quite doubtful), such influence is but a small and unimportant factor in their general climatic effect. The nearest approach to a specific climatic influence upon phthisis is found in the action of the climates of high altitudes, which has been abundantly proved to depend mainly upon the rarefaction of the air. To sum up this branch of the subject, climatic treatment cures phthisis by removing the consumptive from the evil influences of

unfavorable meteorological conditions and of an injurious soil, and by transferring him to the climate where fresh air, sunshine, and an out-door life may be freely enjoyed, and where, in consequence, the processes of respiration, digestion, and sanguification proceed with sufficient energy to combat successfully the hereditary tendency or individual proclivity to pulmonary disease.

3. What climates cure phthisis? There are very many sanatoria which have been *alleged* to cure phthisis, but it is a significent circumstance that, while every year introduces some new claimant to attention, it also witnesses the dropping from the ranks of some discredited impostor. Time was when Montpellier was the reigning favorite. It is now almost forgotten. Pau and Nice have quite out-lived their once universal fame. Jersey, with its capital St. Heliers, once boasted great things, but we now know that its boasting was vain. The above losses of popularity have been amply justified, but other fluctuations of medical opinion and practice have been more arbitrary. The most favored health-resorts of the past generation were Madeira and Egypt. They are both at present under a cloud, but it will probably be a temporary cloud, as, for properly selected cases, these noted and long famous sanatoria have very decided advantages. The chief feature of modern practice is the great and growing popularity of the high altitude stations.

The number of health-resorts for phthisis is so vast that some classification must be attempted, though no satisfactory classification has yet been suggested. In default of better, let us divide sanatoria into three classes:—(*a*) The marine resorts. (*b*) The dry inland resorts. (*c*) The mountain resorts.

(*a*) The best marine resort, if I may so express it, is the ocean-going ship; on the high seas the peculiar features of the marine climate are enjoyed in perfection. Those features are great purity of the air and freedom from all sources of contamination, marked humidity, and very great equability, both as regards temperature and hygrometric condition. The general influence of ocean air is decidedly tonic, and improvement in appetite and gain in weight are almost universal on shipboard. The disadvantages of the sea voyage are — liability to sea-sickness, which is a serious difficulty in only 2 or 3 per cent of cases; the want of proper sleeping-room, and the consequent contamination of the air at night; and the absence of many home comforts. No consumptive should undertake a sea voyage unless he can afford to travel with tolerable comfort, pay for a roomy cabin, and have suitable companionship. The sailing-vessel should in nearly every case be preferred to a steamer, and the voyage to Australia or New Zealand *via* the Cape of Good Hope is the most adapted to the consumptive. The usual time of departure for Australia is September or October, but this is an unfortunate arrangement, as the invalid thus lands at the antipodes at the beginning of summer, the worst and most trying of the Australian seasons. A better plan is to set sail in July or August, so as to reach Australia during the charming and healthful time of spring. Sailing-vessels occupy from seventy to ninety days upon the passage. The sea voyage confers at least temporary benefit upon the great majority of consumptives, except those cases of great debility and prostration which should not be sent to sea. In the course of my four long voyages I have had as fellow-passengers a vast number of consumptives, who, with scarcely an exception, were happy and comfortable at sea, gained in weight, and experienced an amelioration of all their worst symptoms. It is a dictum of most writers upon the climatic treatment of phthisis that hæmorrhagic cases should not be sent to sea. I greatly doubt the accuracy of this view. I have only known two cases

of hæmoptysis occurring at sea, and neither proved serious. I am quite unable to understand any theoretical ground on which hæmorrhage should be apprehended on shipboard. When the sea voyage fails, the causes of failure are often obvious. Excessive debility, rendering the patient unable to accommodate himself to the novel conditions of life at sea, sea-sickness, longing for home, which is apt to be strong amid the solitude of the ocean wastes, an uncomfortable ship, an overcrowded cabin, and an improper dietary —these often retard or prevent the beneficial influence of the sea voyage. There is one important point, of which my experience has afforded me several melancholy instances — viz., the proneness to relapse on reaching land. The patient should be warned to practice great caution as regards diet, exercise, and general habits on landing after a long voyage. Nearest to the climate of ocean comes that of ocean islands, such as Madeira, Teneriffe, the Azores, Nassau in the Bahamas, etc. Cases that have been known to do well on ship-board may be sent to these resorts, with tolerable confidence, the climatic conditions being similar. There is admirable accommodation at Madeira, and many cases do well there ; but diarrhœa is so epidemic as to be known as the "island complaint," and no case of phthisis should be sent there in which intestinal troubles have been much marked. The climate is very soft and soothing, and grateful to those suffering from bronchial or laryngeal complications, but it is deficient in tonic influence, and its effect upon the general course of the disease is decidedly inferior to that of more bracing localities. Patients may be sent there who lack the necessary vitality to enable them to react to tonic climatic conditions. Of the drier and more tonic marine resorts, Algiers, Tangier, and Malaga, are perhaps the best. The reputation of the Riviera is decidedly on the wane. Many seasons are delightful, but often the mistral is exceedingly treacherous, and snow-storms are not unknown. The chief stations in the Riviera are Hyères, Cannes, Nice, Monte Carlo, Mentone, Bordighera, and San Remo. Nice has quite lost its old reputation, owing to the sudden changes to which it is subject. Cannes is a lovely spot, but inferior to Mentone and San Remo for the purposes of the invalid. Where much shelter is a desideratum, Mentone should be preferred. Otherwise, San Remo possesses the best climate in the Riviera. Algiers is a great favorite at present. It possesses a dry, sunny, warm winter climate, with complete immunity from frost and fog. There are very few days on which the invalid cannot enjoy several hours of out-door life, and the proportion of charming weather is far higher than upon the northern shore of the Mediterranean. Consumptives should in no case reside in the town, which is very dusty and a prey to evil odors, but should chose the suburbs, such as Mustafa Inférieur or the Village d'Isly, and, as spring advances, a change inland to the dry and bracing climate of Hammam R'Ihra or Milianah may be advantageously adopted. Tangier resembles Algiers in its general climatic features, but the accommodation is inferior, and it is a very dull place. Malaga has a very good climate, but there is nothing to do, and patients soon weary of it. Biarritz is an excellent place in autumn, but too windy for a winter residence. Arcachon suits cases where nervous irritation is marked. As regards the marine resorts in Britian, Ventnor, Bournemouth, and Torquay are the best, and I have given them in what I consider as the probable order of merit. Ventnor is the warmest and driest of these resorts. Bournemouth has more shelter, and suits cases which cannot tolerate the more decided marine flavor of the air at Ventnor. Glengarriff is probably the best winter climate in Ireland. Rostrevor has some local repute, but it has little to recommend it. There are some excellent marine resorts in Cali-

fornia, of which Santa Barbara is the best known. The Californian coast in its southern parts enjoys a remarkably dry, bright and tonic climate, well adapted for many cases of phthisis. Tasmania has a climate of great salubrity, but there are many very diverse climatic types included within the area of that small island. The west coast is stormy and wet, and wholly unsuitable to the invalid. The southern coast is somewhat too windy. The best regions for the consumptive are the north and northeast shores, which possess one of the brightest, mildest and most genial climates in the world. The coast region of Australia cannot in general be commended, being a sort of battle-ground for the breezes from the sea and the hot blasts from the interior, and the climate is in consequence fickle and stormy. The most favored region in Australia for the consumptive is the interior plain, of which I shall speak presently. The best marine resorts in New Zealand are Napier and Nelson. Speaking generally, the reputation of marine resorts has somewhat waned in proportion as the fame of the dry inland and the mountain sanatoria has increased. No marine resort is, I think, equal to the ocean voyage, where the latter can by enjoyed under the most favorable circumstances.

(*b*) The dry inland resorts. The best of these are Nubia, the interior parts of Algeria, the Orange Free State, and the vast interior plains of Australia, especially the Riverina of New South Wales and the Darling Downs of Queensland. I am inclined to rate very highly this type of climate in the treatment of phthisis. A large proportion of the cases of complete cure which I have known have been effected by a prolonged residence in some dry inland region, the cure, being, without doubt, in nearly every case materially promoted by the adoption of an open-air life, plain diet, and simple manners. Of the four regions mentioned, probably the Orange Free State is the best, as it possesses an advantage over the others in being at a considerable elevation. But personal considerations will lead in many cases to the selection of Australia, and it is no small advantage to send the consumptive to the land where he will meet his own kith and kin, where the language, food, and manners of the people will be familiar and congenial to him, and where he may possibly find such remunerative employment as may induce him to settle permanently. Speaking broadly, I would send to Australia only those consumptives to whom a dry inland climate would be thought to be beneficial, advising them in all cases to avoid the coast regions, and especially the capital towns, to go inland at once, settle upon some farm or sheep station, and make up their minds to a residence of at least two years. A large proportion of cases would thus be cured. To recommend Australia as a sanatorium for phthisis without keeping these points in view is to invite failure and disappointment.

(*c*) The mountain resorts. These sanatoria have sprung into sudden favor within the last twenty years, and their popularity grows yearly. The chief are Davos, Wiesen, St. Moritz, and the Maloja in the Alps; Colorado Springs and Manitou in the Rocky Mountains; Bogota, Jauja and Huancayo in the Andes The almost complete immunity from phthisis enjoyed by residents at high altitudes first suggested their adoption. The most important feature in the medical climatology of the mountain sanatoria is the rarefaction of the air, which promotes respiratory activity, the expansion of the chest, and the absorption of morbid deposits. The dryness, the purity of the air, and the freedom from organic dust are all of importance, but subsidiary to the atmospheric rarefaction. These sanatoria fall into two classes—the cold and the warm. In the Alps and Rocky mountains the winter climate is marked by perpetual snow and severe frost. In the equatorial Andes the climate at high altitudes is one of perpetual spring — humid, warm and vernal. The mountain resorts have proved most efficacious in the following cases: delayed recovery from pneumonia with threatening tuberculosis, chronic pleurisy

with much of fibroid change, incipient catarrh of the apex, chronic tubercular phthisis, with good reaction and the retention of fair constitutional vigor, whether cases of primary disease limited in extent, or single cavity cases without tendency to extend. Hæmorrhagic cases do well, although the profession was long inclined to exclude such cases from the mountain treatment, owing to the unfortunate influence which a false analogical reasoning has exercised upon them. The contra-indications against the adoption of this line of treatment are: Weak circulation, which is absolutely prohibitory, senile change, the *eretische constitution*, extreme debility, and marked and progressive emaciation. Moderate pyrexia is not a hindrance, while sweating and fluxive diarrhœa are usually relieved at high altitudes. Where the cold mountain resorts fail the warm may often prove useful.

4. What cases of phthisis are curable by climate? I have hitherto spoken somewhat dogmatically, as the general principles of medical climatology and the general characters of the sanatoria for phthisis admit of very precise statement; but in dealing with this last question — to which I have more than once been obliged to make incidental allusion — I desire to speak with that diffidence which becomes the therapeutist. In many cases there are few more difficult problems than to determine whether a given case of phthisis will respond to climatic treatment, and what type of climate affords the best hope of success. Speaking generally, only chronic cases with fair reaction are suitable for climatic treatment. If the disease has a well-defined onset, and threatens to run an acute or semi-acute course; if the patient steadily loses ground and shows no gain in weight or other sign of rally under treatment; if the process in the lung is progressive and there are no evidences of repair — in each and all of these cases the interests of the patient will be best served by vetoing climatic treatment. The patient will die soon and die anywhere, and he may as well be allowed to pass his last days amidst the comforts and sympathies of home. Cases marked by circulatory weakness, with fast, feeble, fluttering pulse, slight cyanosis, and persistent coldness of the extremities, are very unfavorable for climatic treatment, and should on no account be sent to the mountains. Cases in which laryngeal or intestinal ulceration or renal complication have supervened upon the ordinary type of the disease should be allowed to die at home. Cases in which anæmia appears early and is well marked are unlikely to respond to climatic treatment. On the other hand, we see a vast number of cases of phthisis in which the onset is very gradual and the constitutional involvement for a long time slight. Such cases nearly always improve, even in this climate, under a system of high feeding, fresh air life, and cod-liver oil, and I entertain no doubt that a considerable proportion of them may be completely cured by removal to a suitable climate and the adoption of a prudent mode of life. In determining the climate to be chosen, it used to be taught that the condition of the bronchial mucous membrane was the chief guide: that cases with much bronchial catarrh should go to a dry climate, cases with dry irritable mucous membrane to a moist sedative climate, and so on. I greatly doubt the utility of this rule. Phthisis is not bronchitis, and all analogies for its treatment drawn from our knowledge of bronchitis are not merely unfruitful but misleading. In the therapeutics of consumption we have given up directing our medicinal treatment to the bronchial mucous membrane, and I am unable to see why we should still base our climatic treatment on a theory which we thus implicitly acknowledge to be unsound. Hippo, paregoric, and squills have almost disappeared from our treatment of phthisis; and climatic sanatoria, which soothes the patient's cough at the expense of his appetite and strength, must follow them into deserved oblivion. The consumptive does not die of his cough. He dies of progressive wasting. We have thrown aside expectorants and anodynes in favor of good food, exercise, and such aids to nutrition as cod-liver oil, hypophosphites, maltine, etc., and we must, when possible, choose climatic re-

sorts which are tonic and stimulant rather than those that are mainly sedative. The vital point about any climate is, will it promote nutrition? In early uncomplicated cases with vigorous circulation I think the mountain climates offer the best hope. If the circulation be feeble, or if there be much nervous irritation, the choice will lie between the sea voyage and residence in such dry inland resorts as Upper Egypt or the interior plains of Australia. The sea voyage has the great recommendation that it rarely does harm, except in those very advanced cases which are beyond the reach of all treatment. If the patient objects to the mountains and shrinks from the long sea voyage, I think Algeria or Morocco should be preferred to France or Italy. Let me say, in conclusion, that climatic change is a snare instead of a help, a curse rather than a blessing, if it be regarded as a complete therapeusis in itself, and as enabling the patient to dispense with the usual lines of treatment and his customary precautions. Climate is not a specific. At best it is only a condition of cure, and we may expect it to be effectual only when the patient's food, habits, occupation, and mode of life are wisely regulated, so as to facilitate its beneficent influence. — *James Alexander Lindsay, A. M., M. D., in The Lancet.*

A NEW REMEDY FOR BURNS.

Many remedies have at one time or another been proposed for the surgical condition following the application of excessive heat to the body, and while some of these are of value, still all are more or less unsatisfactory. The alleviation of the pain and suffering attendant upon burns is one of the most important points in the case, toward which the surgeon directs his efforts. The shock from this cause alone, is sufficient oftentimes to produce death, and always is great. Accidentally, I recently discovered a remedy, which is easily applied and exceedingly prompt in its action. I was called in some haste to a little child about three weeks ago, who was badly burned about the hands and face from falling on a hot stove. The burns were deep, the pain excessive, and the shock very considerable. I hastily sent to the drug-store for a mixture of lime-water, olive oil and carbolic acid. While waiting for this, I prepared to give the child a hypodermic injection of morphine, with which to allay the agony, which was so great that convulsions seemed imminent. While I was getting ready to do this, I espied upon the shelf a bottle of *Pinus Canadensis* (colorless), which I had some time before ordered to be diluted as a vaginal wash for the mother. Remembering its wonderful soothing influence in acute inflammations of the vagina, I at once concluded to try it. Taking a corner of a soft handkerchief, I rapidly painted the injured parts, when, like magic, the pain ceased. You can well imagine my surprise and delight at the result. I directed a camel's-hair brush to be purchased, and had the mother make free applica tions, and the case had no other treatment, save a little iodoform ointment later on. Since this, I have tried it in several cases, both slight and severe, and with the same delightful results. The preparation used was made by the Rio Chemical Co., of St. Louis, Missouri.— *Medical Register.*

BOOKS AND BOOK REVIEWS.

A TEXT-BOOK OF PATHOLOGICAL ANATOMY AND PATHOGENESIS. By ERNST ZIEGLER, Professor of Pathological Anatomy in the University of Tübingen. Translated by DONALD MACALLISTER, M.A., M. D. Three parts complete in one volume. Pp. xxvii. and 1091. NEW YORK: WILLIAM WOOD & Co. CHICAGO: W. T. KEENER. 1887.

This is apparently a reprint of the English edition in three volumes. It is a misfortune that the translator has omitted that part of the original German edition which treats of the pathological anatomy of the Bones, Muscles, Eye, Ear and Genital Organs, for, defend the omission as he may, the translated work remains incomplete and inferior to the original. Of the merit of the treatise it need only be said here that it is the most thoroughly systematic, complete and satisfactory text-book upon the subject in the English language. The idea of combining the three volumes in one is a good one both for convenience and cheapness, but it is a great pity that at the same time clear printing and clear cuts have been sacrificed. The printing is unworthy of the house which sends it out, and most of the cuts are very poorly engraved, two of them, numbers 74 and 80, being almost worthless. E. W.

A LABORATORY MANUAL OF CHEMISTRY, MEDICAL AND PHARMACEUTICAL. By OSCAR OLDBERG, Pharm., D., Professor of Pharmacy and Director of the Pharmaceutical Laboratories in the Illinois College of Pharmacy, Northwestern University, and John H. Long, Sc. D., Professor of Chemistry and Director of the Chemical Laboratories of the Chicago Medical College and the Illinois College of Pharmacy, Northwestern University. With original illustrations. pp. 445. Chicago: W. T. KEENER.

The object of the authors "in preparing this manual was to provide in convenient form a sufficent number of suitable lessons in laboratory work, and at the same time to embody in the book the facts of inorganic chemistry most important to pharmacy and medicine."

Part I. Describes the elementary substances, metallic and non-metallic, used in medicine and pharmacy, with experiments, tests and a list of the preparations of which they form a chief constituent.

Part II. "Synthetical Chemistry," describes inorganic compounds and compounds prepared with organic acids. The specific gravity, solubility and other ordinary chemical facts about these substances are given, and the method of preparation of the most of those that can be made in an ordinary chemical laboratory. In many cases the methods directed by several different pharmacopœias are given with criticisms as to their relative advantages.

Part III. "Analytical Chemistry," describes methods of qualitative analysis and volumetric analysis with sections on sugar analysis, determination of amounts of alcohol in fermented liquors, determination of diastatic power of malt extract, valuation of jalap, testing of pepsin, testing for some alkaloids as those of chinchona, opium, nux vomica, etc., and a chapter on urine-analysis.

The book is a laboratary manual and presupposes a considerable knowledge of the subject. Nothing is said of elementary or theoretical chemistry and very little about the numerous "dodges" which constitute so large a part of the manipulative skill necessary to results. But a teacher can explain these things quicker and better than any book. A solitary student, however, would often find himself at a loss in going through the exercises.

Occasionally the details in minor points are singularly redundant. Of iron we are told that "In the laboratory it is employed in stands, tongs, furnaces, oil and sand-baths, etc., on account of its strength and relative cheapness," etc., etc. Surely space might have been spared from this for a fuller description of methods.

The description of the various processes are, however, accurate and for the most part clear. An occasional obscurity detracts more from the symmetry than the usefulness of the book.

The chapter on urine-analysis is excellent. It does not contain many methods or those which, even if followed with great labor, would be of doubtful value; the best of the well tried ones are given; more would be an encumbrance to the student, or even to the practitioner, unless under exceptional circumstances.

The text is very free from printer's errors, a mark of great care in a book of this kind.

The cuts illustrate their subjects, though some might miss something in execution.

The plates of urine sediments cover most of the common forms, though room could have been spared for more, and all the possibilities of drawing, and especially of printing, were not exhausted in their production.

On the whole, the book is an excellent one and most of its faults will probably be removed in a second edition. LESTER CURTIS.

ON THE PATHOLOGY AND TREATMENT OF GONORRHŒA AND SPERMATORRHŒA. By J. L. MILTON, Senior Surgeon to St. John's Hospital for Diseases of the Skin, London. New York: WILLIAM WOOD & Co. 1887.

Mr. Milton has written a book, intended, so the preface informs us, as "one of reference for the busy practitioner."

Mr. Milton is an Englishman. He is pugilistic. His writing smacks of the same pugnacity that characterizes some of the prose works of his great namesake, the author of "Paradise Lost."

We imagine him detecting poor M. Chabalier in some error. He rubs his hands gleefully together, and calling on the "busy practitioners" to form a ring, says: "Now, gentlemen, though you are very busy and have come to consult me for another purpose, please pause a moment and see me polish off this insignificant Frenchman, who has attempted to tell what he knows about the history of gonorrhœa. See the foolishness of such a statement of this; the imbecility made manifest by this utterance; could any one with reason, with brains, have written this?" And so poor M. Chabalier leaves the ring with the black eye and bloody nose that Mr. Milton promised to give him.

Then the busy practitioners, hungry for information, crowd around Mr. Milton and ask him, as a man of learning and of high standing, to give them his opinion upon the evil effects of gonorrhœa, or upon his use of injections in the treatment of the disease. "That reminds me, gentlemen," he replies, "did you ever hear such nonsense as was uttered by Dr. Noeggerath, of New York? I have never seen his article upon the consequences of gonorrhœa, but I read a review of it once. If you will wait for a few moments until I show you how I can tear that article of Dr. Noeggerath's—well, ahem! I suppose I should say the review of the article, for, as I said, I have never seen the original—to pieces, I will gladly give you the result of my experience in treatment, etc." And there Dr. Noeggerath's article is torn to shreds. And so on through the book.

And Mr. Milton is not afraid. Such men as Hunter, Sydneham, Troussean, Cooper and Gross, have to take their share of the blows so freely given by this energetic and excitable Englishman. And many of the blows are fairly dealt. But the busy practitioner is supposed to consult Mr. Milton, not to witness his display of skill in demolishing theories and ideas, many of them dead and buried years ago, but to get Mr. Milton's own ideas; for every one knows that the opinion of a man of such wide experience and careful observation must be valuable. And if the practitioner has the time to read much that is not of practical value to him, he will find much that is of the greatest value. Moreover, Mr. Milton is always interesting. His literary style, especially in the line of sarcasm, is something not possessed by many medical writers.

Were Mr. Milton's chapter on spermatorrhœa let loose upon the general public, we fear it would cause consternation and fill the physicians' offices with anxious patients, if the laity suspected that a man of large experience and high standing in the profession held that every nocturnal emission was unnatural. A boy or man having more than one such emission a month should be treated. These views are at variance with those of one of our leading Chicago physicians, who being consulted by a young man for monthly nocturnal emissions startled him by exclaiming—"Great Heavens! only once a month! I'll try to give you something to make you have them once in two weeks anyhow" "Emissions are invariably more or less injurious." "The disease (spermatorrhœa) yearly reduces hundreds if not thousands to impotence and all its attendant ills, hypochondria, weariness of life, insanity and so on."

"I have passed the bougie hundreds of times for spermatorrhœa."

"The name (spermatorrhœa) has been objected to, and we have been told that the term ought to be applied to cases in which the semen trickles away insensibly from the urethra—a disease so rare that I have never seen a case, and strongly doubt the existence of it; to which the term spermatorrhœa is not a whit more suited than it is to emissions."

These are not quotations from quack's pamphlet, but from the volume on "Pathology and Treatment of Spermatorrhœa," by J. L. Milton, Senior Surgeon to St. John's Hospital for Disease of Skin, London.

WHAT TO DO IN CASES OF POISONING. By William Murrel, M. D., F. R. C. P. First American from the fifth English Edition. Edited by FRANK WOODBURY, M. D. PHILADELPHIA: THE MEDICAL REGISTER COMPANY. 1887.

This edition contains one hundred and fifty-eight pages. The author says that if there were fewer poisons the treatise would be smaller. The arrangement is into two general divisions, viz: "Introduction" which treats of the subject in a

general way, and "The Poisons in Alphabetical Order," which treats of each in order under the topics, *How Taken*, *Symptoms*, *Fatal Dose*, *Treatment*. Both the arrangement and general treatment of the subjects leave nothing to be desired. In respect to the desirability of having this or some other equally good book upon the subject, the author's remarks about the stomach pump may be quoted. "Every doctor should have a stomach pump or an efficient substitute. It may not be wanted for years, but it may be wanted to-morrow, and a life, or many lives, may depend upon its being in working order." E. W.

THE NURSING AND CARE OF THE NERVOUS AND THE INSANE. By CHARLES K. MILLS, M. D. 12mo., pp. 147. PHILADELPHIA: J. B. LIPPINCOTT COMPANY. 1887. CHICAGO: W. T. KEENER.

This little work forms part of a series of "Practical Lessons in Nursing" now being issued by the Lippincott Company.

The first chapter deals with the management of the commoner nervous disorders and with the necessary qualifications, of a good nurse for nervous patients. The forms of insensibility are given and so much of their differential diagnosis as may be important for the nurse to know. On page 26 we find the old idea enunciated regarding the necessity of arousing the dormant nervous system, in cases of narcotic poisoning. Fortunately the old barbaric methods are not described. Chapter two relates to massage, muscle-beating, bathing, etc. This is much the most useful part of the work, and the most easily comprehended. Chapter three deals with the application of electricity, forms of batteries, etc. Here there is too much and yet not enough. We fancy the average nurse, who thoroughly masters this part of the work, will consider himself an accomplished electrician, and that too without just reason for the belief. With the varying forms of batteries and electrical appliances it is the duty of the physician, to direct the nurse just how a particular battery is to used and for how long in each case. As a matter of fact, the electrical treatment ought always to be given by the physician. The final chapter deals with the nursing and care of the insane, and is in the main a good exposition of the written and oral instruction given attendants in our better hospitals for the insane.

The work, as a whole, is not specific enough, nor is it simple in its explanations. Too much knowledge on the part of the reader is assumed. The physician and trained nurse will find many things of value in this work, but the nurse without previous elementary instruction will not find it to be of great value. H. N. M.

OUTLINES FOR THE MANAGEMENT OF DIET. By EDWARD TUNIS BRUEN 12 mo., pp. 138. PHILADELPHIA: J. B. LIPPINCOTT COMPANY. 1887. CHICAGO: W. T. KEENER.

This third volume of the series of "Practical Lessons in Nursing," is a very creditable production. While the work claims to be but an outline of the subject, yet the rules for diet are concisely expressed and in sufficient fullness for all clinical purposes. Not only the nurse, but the physician as well, will find here valuable suggestions regarding diet in most of the cases for which he will be called upon to prescribe.

The work opens with a short description of the physiology of digestion. This is followed by an excellent chapter on the regulation of food in the different periods of life. The beverages as accessories of diet receive consideration, and the views adopted are similar in many respects to those held by Sir William Roberts. Special plans of diet are considered, and are followed by a chapter devoted to the amount of food required by the system, followed by one containing hints on the diet of the corpulent and the thin. The remainder of the work is devoted to the consideration of diet in special diseases.

The work is well arranged, well written, and forms a small but excellent addition to the literature of dietetics. H. N. M.

THE CURABILITY OF INSANITY AND THE INDIVIDUALIZED TREATMENT OF THE INSANE. By JOHN S. BUTLER, M. D. Pp. 59. NEW YORK and LONDON: G. P. PUTNAM'S SONS. CHICAGO: W. T. KEENER. 1887.

In this little volume Dr. Butler makes a strong and earnest plea in favor of the individual, *moral*, treatment of the insane. To secure this there must be more buildings, with fewer occupants to the building, segregation of patients. The man afflicted with acute melancholia must not be subjected to the depressing influences that overcome him, if associated daily with the one demented and beyond cure. The asylum must be, in fact as in name, a refuge, a retreat, a home for the insane, and not a prison where all who enter must lay aside all hope of leaving.

Dr. Butler believes that the present alarming increase in the number of insane is due to neglect of proper methods of prevention. The time to begin to prevent insanity is in childhood. Brains developed at the expense of the body, the pushing of the boy into business and the girl into society, are accountable for many of the wrecks of manhood and womanhood that our asylums can show. Not alone the alienist, but the gynæcologist, the oculist, the general practitioner as well, can cite instance after instance where careless or improper

training of the child has led to irreparable trouble and disease.

Could this little essay be placed, where we fear it will not be, in the hands of parents, it would do much good. Yet, though the physician may not need argument to convince him of the strength of Dr. Butler's position, it will amply repay him to read the opinions of a man of wide experience and large heart. One leaves the book with the renewed determination to be more humane and gentle toward the unfortunate, and to do all in one's power to inculcate in the mind of the parent the importance of training children into men and women, well rounded out, physically and morally, as well as mentally and socially.

TRANSACTIONS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA. Vol. XII. p. xxiv. and 289. Edited by W. E. HUGHES, M. D. PHILADELPHIA: Printed for the Society by W. J. DORNAN. 1886.

This volume contains the report of the proceedings of the society from September, 1883, to July, 1885. There are also given lists of the officers for each of the years mentioned above, of former presidents of the society and of the present members.

The arrangement is by systems, *e.g.*, The Vascular System, The Organs of Respiration, etc.

Many of the reports are of great interest and importance, but the limits of this notice will not allow special comment. Such publications as a whole are of very great value to the profession, and the society deserves warm commendation for its enterprise and liberality in printing and distributing the reports of its proceedings.

A TREATISE ON DIPHTHERIA, HISTORICALLY AND PRACTICALLY CONSIDERED: Including Croup, Tracheotomy and Intubation. By A. SANNE. Translated, annotated and the Surgical Anatomy added, by HENRY Z. GILL, A. M., M. D., LL. D. Pp. xxx and 656. ST. LOUIS: J. H. CHAMBERS & Co. 1887.

This translation is the work of an enthusiast, and he has evidently labored under the impression that the importance of the subject attaches equally to this particular book. As a whole it is comprehensive and complete. The style of the author, however, is prolix and discursive. The volume might be reduced one-half with advantage. The apology of the translator, in his preface, that he has been too busy to attend to his work is, at least, an unusual one. Despite these unfavorable features, he book is in many respects a good one, and may repay any who have patience enough to read it.

TREATMENT OF DISEASE IN CHILDREN, including the Outlines of Diagnosis and the Chief Pathological Differences between Children and Adults. By ANGEL MONEY, M. D., M. R. C. P. Pp. xiii and 560, 16 mo. PHILADELPHIA: P. BLAKISTON, SON & Co. CHICAGO: W. T. KEENER. 1887.

It is a pleasure to commend such a book as this one is. The style of the author is very readable, and at the same time it is conservative, philosophic and able. He is the assistant physician to the Hospital for Sick Children, Great Ormond street, London, and what he has to say is evidently based upon a wide and ample experience. The chapters on "General Treatment of Disease," "The Principles and Practice of Feeding Infants and Children" are particularly good. That on "Diseases of the Nervous System" contains a discussion of "Raynaud's Disease," "Tetany," and much more not usually included in works upon disease in children. The table of contents and the index and the letterpress are good and the size of the book is very convenient. It can hardly fail to be one of the successful books. E. W.

THE PRACTITIONER'S HAND-BOOK OF TREATMENT: OR THE PRINCIPLES OF THERAPEUTICS. By J. MILNER FOTHERGILL, M. D. Pp. xx and 660, 16mo. Third American from the third English edition. PHILADELPHIA: LEA BROTHERS & COMPANY. 1887. CHICAGO: A. C. McCLURG & COMPANY.

The author repeats, in this edition, his statement that the book is not intended as a complete treatise on "Practice of Physic," but rather to aid the reader and to "guide him in his therapeutic evolution." The additions to this third edition are two chapters, one on "The Dietary in Acute Disease and Mal-Assimilation," and one on "The Management of Convalescence." For those unfamiliar with the author's writings it is only necessary to say that this book, like his others, while prolix, is very readable and contains much that is of great value. He tries to present his subject from a philosophical standpoint and succeeds admirably. He values accurate diagnosis as highly as any one, but does not deal with that subject in this work. E. W.

THE YEAR-BOOK OF TREATMENT FOR 1886: A Critical Review for Practitioners of Medicine and Surgery. Pp. viii., 304. PHILADELPHIA: LEA BROTHERS & Co. CHICAGO: W. T. KEENER.

This little book is issued annually for the purpose of furnishing a résumé of all the more important advances made in the treatment of disease during the year. Each department of practice is represented by a contribution from an

author of note, who is specially interested in the subject upon which he writes. It should be purchased each year and read by all who are desirous of keeping abreast of the times, for in it will be found much of real value which by reason of the multitude of journals would otherwise have escaped attention. W. E. C.

LECTURES ON THE DISEASES OF THE NERVOUS SYSTEM. Delivered at the Hospital Salpètrière. By J. M. CHARCOT, Professor of the Faculty of Medicine of Paris, Physician to the Hospital Salpètrière, Member of the Institute and of the Academy of Medicine, Honorary President of the Anatomical Society, etc. Volume iii.

The third volume of Professor Charcot's most excellent work on the nervous system is a welcome addition to medical literature. The chief part of this volume is devoted to the study of hysteria in its many forms. Professor Charcot has written his ideas of hysteria in a clear and condensed form. He describes hysterical monoplegia, hystero-traumatic contractures, hysterical coxalgia, hysteria of boys and of men, hysterical mutism, rhythmical chorea of the hysterical, etc.

Considerable space is devoted to the amoytiophic disturbances following articular and chronic rheumatism. Finally, aphasia, in all of its forms, is treated in a clear and concise manner.

A MANUAL OF TREATMENT BY MASSAGE AND METHODICAL MUSCLE EXERCISE. By JOSEPH SCHREIBER, M. D. Translated by WALTER MENDELSON, M. D. Pp. viii and 285, large 16 mo. PHILADELPHIA: LEA BROTHERS & COMPANY. CHICAGO: A. C. MCCLURG & COMPANY. 1887.

The author gives Ling, the originator of the so-called "Swedish Movement Cure," great credit for his perseverance in establishing the system of treatment. He is in no sense a blind enthusiast and does not consider treatment by massage and exercise a panacea. He does think, however, that the method is capable of great usefulness when the cases for treatment are intelligently selected. He thinks that only very simple apparatus is necessary, but has profusely illustrated his text with apparatus which those may use who prefer it. The opening chapters treat the subject historically and generally, and others follow devoted to those diseases to which the treatment is adapted. The book, upon the whole, is methodical and thorough, and the style is attractive. E. W.

ANATOMICAL RESEARCHES IN THE HUMAN RECTUM AND A NEW METHOD OF RECTAL INSPECTION. By WALTER J. OTIS, M. D., of Boston. First part: The Sacculi of the Rectum, with one wood cut in the text and eight plates. [From PROFESSOR BRAUNE'S Department in the Anatomical Institute at Leipzig.] LEIPZIG: VEIT & COMPANY. 1887.

The first part is devoted to a careful description of the gross anatomy of the rectum as observed in studies made upon the cadaver. The writer dwells especially upon the conformation of the inner surface of the rectum as modified by the folds of mucous membrane encroaching upon the lumen of the tube, variously described by different authors. Also, upon the best methods of examining the rectum with the least distortion. For this he advises placing the patient in the lithotomy and knee-chest positiosn and the use of a retractor. The work is being published in German and English in parallel columns.

MATERNITY, INFANCY, CHILDHOOD. Hygiene of Pregnancy: Nursing and Weaning of Infants: The Care of Children in Health and Disease. By JOHN M. KEATING, M. D. Pp. 221, 12 mo. PHILADELPHIA: J. B. LIPPINCOTT & COMPANY, 1887, CHICAGO: W. T. KEENER.

This is one of the four books published by the same company in similar style, as a "Series" on "Practical Lessons in Nursing." The preface states that "this little work is intended for mothers and for those who have undertaken the care of infants and children in health and sickness." Probably no book on such a subject could be perfect. This one is at least very good and can be confidently recommended by physicians to those for whom it is intended. E. W.